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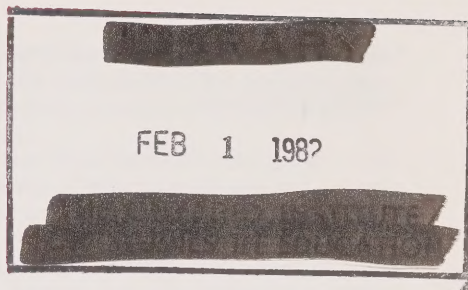
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Canada Year Book 1980~81



A review
of economic, social and political
developments in Canada

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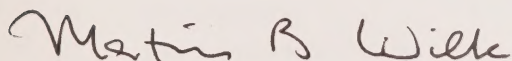
Preface

Canada Year Book 1980-81 is the latest edition in a series of books which record developments in the country's economic, social and political life. Like its predecessors dating back to 1905, this edition brings together information from a broad spectrum of sources to present a composite picture of Canada.

Since 1867, which saw publication of the first *Year-Book and Almanac of British North America*, the value of presenting such a wealth of information in a single volume has been recognized. Departments, agencies and organizations across the structure of the federal and provincial governments and the private sector have provided the information for this volume and their contributions are gratefully acknowledged.

The scope of information included in the *Canada Year Book* makes it a unique reference work. It is widely used as an authoritative information source by parliamentarians, researchers, teachers, librarians and many others.

This edition includes a new chapter on social security with comprehensive tables not available in earlier volumes. In the appendices, an economic chronology replaces the former general chronology. A political update records executive changes in federal, provincial and territorial governments. For each of the book's 23 chapters, sources are listed at the end of the text and tables to direct readers to the most timely information.



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April 1981

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Metric conversion

Conversion to the metric system was initiated in the *Canada Year Book 1976-77*. In view of the degree of metric conversion in Canada since then, most quantities in the *Canada Year Book 1980-81* appear only in SI metric or in neutral units such as dollars or dozens.

Following are conversion factors for units used in the present edition and some others in common use. Conversions are from SI metric to traditional units. For a full listing of the mathematical relationships between traditional units and SI metric, readers are referred to *Canadian Metric Practice Guide*, published by the Canadian Standards Association, 178 Rexdale Blvd., Rexdale, Ont. M9W 1R3. The same number of significant digits is used in the conversion factors which follow as in the *Canadian Metric Practice Guide*. If users do not need this level of accuracy, they can round off figures at any number of digits, either in the calculations or in the results. It is a requirement in SI metric to use spaces instead of commas to separate groups of three digits; a space is optional with a four-digit number. Although this practice is not imperative with neutral units, it is taking place in many cases now and will undoubtedly come about generally through standardization. In all Statistics Canada publications, a period is used as a decimal marker.

Relative weights and measures: SI Metric, Canadian Imperial and United States units

Area

1 km² (square kilometre) = 0.3861022 square miles
1 ha (hectare) = 2.471054 acres

Length

1 m (metre) = 39.37 inches
= 3.281 feet
= 1.094 yards
1 km (kilometre) = 0.6213712 statute miles = 3,280.840 feet
= 0.5399568 nautical miles = 3,282.937 feet

Volume and capacity

1 dm³ (cubic decimetre) = 0.0353147 cubic feet
= 0.4237760 board feet (for lumber)
= 0.0274962 bushels (for grain)
= 1 L (litre) (for liquids or, in some cases, for fine solids which pour)
= 0.2199693 Canadian gallons
= 35.1951 fluid ounces
= 0.8798774 quarts
= 1.75975 pints
= 0.264172 US gallons
= 1.05669 US quarts
= 2.11338 US pints
1 imperial proof gallon = 1.36 US proof gallons
1 m³ (cubic metre) = 6.289811 barrels (petroleum or other liquid)
= 0.3531466 registered tons (in shipping)*
= 35.31466 cubic feet

Mass (weight)

1 g (gram) = 0.03527396 ounces (avoirdupois)
= 0.03215075 ounces (troy or apothecary)
1 kg (kilogram) = 2.20462262 pounds (avoirdupois)
1 t (metric tonne) = 1.10231131 tons (short)
= 0.98420653 tons (long)

(For registered ton, see Volume and capacity above and footnote*)

Length and mass

1 t.km (tonne kilometre) = 0.6849446 short ton miles

Temperature

Fahrenheit temperature = 1.8 (Celsius temperature) + 32

Celsius temperature = 5/9 (Fahrenheit temperature - 32)

The following weights and measures are used in connection with the principal field crops and fruits:

<i>Crops</i>	<i>Pounds per bushel</i>	<i>Kilograms per bushel</i>	<i>Bushels per 1 000 kg (1 t)</i>
Wheat, potatoes and peas	60	27.215 5	36.7437
Wheat flour	43.48	19.721 4	50.7063
Oats	34	15.422 1	64.8418
Barley and buckwheat	48	21.772 4	45.9296
Rye, flaxseed and corn	56	25.401 2	39.3682
Mixed grains	45	20.411 7	48.9916
Rapeseed, mustard seed, pears, plums, cherries, peaches and apricots	50	22.679 6	44.0925
Sunflower seed	24	10.886 2	91.8593
Apples	42	19.050 9	52.4910

Strawberries and raspberries 1 kg = 1.47 quarts in BC

= 1.76 quarts in all other provinces

To produce 100 kg of flour it takes 138 kg of wheat.

*Gross registered tonnage of a ship, as used by Lloyd's Register of Shipping, is a measurement of the total capacity of the ship and is not a measure of weight. Net registered tonnage equals gross registered tonnage minus space used for accommodation, machinery, engine area and fuel storage, and so states the cargo carrying ability of the ship.

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Dimensions

1.1

Canada is the largest country in the Western Hemisphere and second largest in the world. Its territory of 9 922 330 km² (square kilometres) varies from the almost semi-tropical Great Lakes peninsula and southwest Pacific Coast to wide fertile prairies and great areas of mountains, rocks and lakes to northern wilderness and Arctic tundra. The greatest north-south distance is from Cape Columbia on Ellesmere Island (83°05'37"N, 70°22'07"W) to Middle Island in Lake Erie (41°41'00"N, 82°40'47"W) 4 633.738 km (± 10 km). The greatest east-west distance is from Cape Spear, Nfld. (47°31'12"N, 52°37'28"W) to Yukon-Alaska (60°18'24"N, 141°00'W) 5 514.106 km (± 10 km).

Politically, Canada is divided into 10 provinces and two territories. Each province administers its own natural resources. The resources (except for game) of Yukon and Northwest Territories are administered by the federal government, because of the extent and remoteness of the territories and their sparse population. Land and freshwater areas of the provinces and territories are given in Table 1.1.

There is no permanent settlement in approximately 89% of Canada. Only the smallest province, Prince Edward Island, is completely occupied. Large parts of the interior of Nova Scotia, New Brunswick and the Gaspé Peninsula are vacant. Around the Newfoundland coast and on the shores of the St. Lawrence River below Quebec City there are only narrow bands of settlement.

About 58% of Canada's population lives between the American border and a 1 046 km east-west line from Quebec City to Sault Ste Marie. In this area, Montreal, Toronto, Hamilton, Ottawa, London, Windsor, Quebec City and Kitchener account for more than one-third of the population.

The largest tract of continuous settlement is in the Prairie provinces, running 1 448 km along the US border, north 161 km in Manitoba and west to the 55th parallel in Alberta, about 644 km north of the international border. This block occupies about 6.2% of Canada's area and contains four cities, Edmonton, Calgary, Winnipeg and Regina. North of this block, astride the Alberta-British Columbia border, the Peace River district is an agricultural area which reaches the 57th parallel.

Settlement is continuous through the southern half of British Columbia in interconnecting strips following mountain valleys and coastal plains. BC's population is most dense, however, in the Lower Fraser Valley, principally in the Vancouver area.

North of the areas already described are a number of unconnected settlements, the largest located in Ontario and Quebec between the 47th and 50th parallels. From east to west these are: the Lac St-Jean Lowland, some 161 km north of Quebec City, the Clay Belts astride the Ontario-Quebec border, the Lakehead, and the Dryden and Fort Frances areas near the Manitoba boundary. Outside these urban-rural blocks are numerous settlements related to mining, forest industries, transportation, administration, defence, hunting and fishing but with little or no agriculture.

Mountains and other heights

1.1.1

The great Cordilleran mountain system is Canada's most impressive physical feature. Many peaks in the various ranges of the Canadian Cordillera are over 4 500 m (metres) high and approximately 1 502 km² of territory lie above the 3 048 m mark. Mount Logan, 5 951 m above sea level, in the St. Elias Mountains of Yukon is the highest point in Canada.

The highest points in each province are: Newfoundland, 1 652 m; Prince Edward Island, 142 m; Nova Scotia, 532 m; New Brunswick, 820 m; Quebec, 1 652 m; Ontario, 693 m; Manitoba, 832 m; Saskatchewan, 1 392 m; Alberta, 3 747 m; British Columbia, 4 663 m; Yukon, 5 951 m; and the Northwest Territories 2 762 m.

Rossland, BC, is the highest city in Canada (1 056 m) and Banff, Alta., is the highest hamlet (1 396 m). Chilco Lake in British Columbia, with an area of 194 km², is

the highest major lake (1 171 m). Heights of the more important Canadian mountains and other elevations are given in Table 1.2.

1.1.2 Inland waters

Abundant water supplies have been essential to the development of Canada's fisheries and wildlife resources, hydroelectric power, agriculture, recreational activities, navigation, domestic water supply and industrial production.

Each year 7 254 478 million tonnes of water fall on Canada as rain and snow. Much of it evaporates, some is stored temporarily in lakes, groundwater reservoirs and glaciers, and a large amount drains as surface runoff following streams and rivers to the oceans. Rapid melting of snow in spring causes floods, erosion and other problems. Most of Canada has ample precipitation averaging about 76 to 91 cm (centimetres) annually in many regions. In areas of little precipitation, greatest demand for water occurs in the hot summer weather; prolonged dry spells may mean water shortages.

Much of Canada's water is in undeveloped areas. Some other areas, such as the Prairies, have insufficient water for present needs.

About 755 165 km² or 8.2% of Canada's total area is covered by lakes and rivers (Table 1.1). Lake storage provides water in time of drought that is later replenished. Lakes are natural regulators of river flow; they smooth out peak flows during flooding and sustain stream flow during dry seasons. Among the largest freshwater bodies in the world are the Great Lakes with an area of almost 258 999 km²; 37% is in Canada and 63% in the United States (Table 1.3). These lakes are sufficiently large to have

The map of Canada is liberally splashed with lakes and streams. More than 8% of the total area is fresh water. Pollution and water quality are major concerns.

measurable, although slight, tides. Other large lakes in Canada are Great Bear Lake, Great Slave Lake and Lake Winnipeg, with areas from 24 390 to 31 328 km². Countless smaller lakes are scattered throughout the country, particularly in the Canadian Shield. For example, southeast of Lake Winnipeg there are some 3,000 lakes in an area of 15 773 km²; southeast of Reindeer Lake in Saskatchewan there are some 7,500 lakes in an area of 13 727 km². The size and elevation of lakes that are more than 388 km² in area are listed in Table 1.4.

Groundwater is another important source of freshwater for communities, industries and irrigators, contributing about 10% of the water supplied by municipal water systems. Although quantities are much smaller than from rivers and lakes, many communities and some industries are completely dependent on groundwater supplies. In some areas, particularly the Prairies, groundwater is the principal source of water streams during extended dry weather.

The volume of water stored as snow and ice in North America's glaciers is many times greater than all the lakes, rivers and reservoirs. Most of this is permanently frozen in polar ice caps and is inaccessible, but polar ice masses have a strong indirect influence on the hydrologic cycle through their effect on weather patterns. In temperate regions, however, alpine glaciers exert a direct influence on the hydrologic cycle as water from melting glaciers frequently sustains stream flow during dry seasons. In hot summer months, glaciers may contribute up to 25% of the flow in part of the Saskatchewan and Athabasca rivers. About 150 000 km² or 75% of glaciated areas of Canada are in the Arctic islands and 50 000 km² or 25% on the mainland. Of the latter figure 38 000 km² are in the Pacific drainage basin and 10 500 km² in the Yukon drainage basin. The remaining 3 885 km² are shared among the Arctic, Great Slave, Saskatchewan-Nelson and Labrador drainage basins. The number of glaciers in Canada is estimated at 75,000.

In Canada 90% of water used comes from streams and other surface sources such as lakes and man-made reservoirs. The combined mean annual flow of all streams has been estimated at 99.1 million cubic decimetres per second, equivalent to about 60% of Canada's mean annual precipitation.

Canada's history and industrial development has been influenced by its great rivers. Earliest settlements centred around water supplies and water was essential for transportation. Canada's fur trade flourished because of the ready access to the interior provided by the St. Lawrence River, the Great Lakes and many other waterways. Plentiful water supplies in the fertile plains of Southern Ontario and Quebec attracted industrious farmers. River-borne transportation of lumber and later the power of water-driven turbines were vital factors in building an industrial base. Water remains a key to Canada's development, supplying renewable energy for industrial growth, providing easy and cheap transport for raw materials and playing a vital part in their processing.

Water problems in Canada are associated with storage, distribution and pollution. Current demands for greater and more diversified water use are complicated by a need to reverse the trend toward deterioration in water quality resulting from urbanization, industrialization and agricultural developments. Pollution and water quality are of major concern since they have a direct bearing on Canada's well-being and economic growth.

The international boundary line between Canada and the United States, including Alaska, is 8 892 km long, of which 5 063 km lie along or across water bodies. Boundary water basins are of economic importance to both countries. Natural resources of the boundary basins and transportation and hydroelectric power resources of the waterways in these basins have helped foster population concentration and industrial development in Canada along a broad band bordering the 49th parallel.

In 1909 Canada and the US signed the Boundary Waters Treaty which set out clear limitations on either country's freedom to act if such action might affect the other country. The International Joint Commission was created to deal with problems that could arise along the boundary. The commission has handled problems in international basins from the Pacific to the Atlantic Ocean, from small streams to the St. Lawrence River. More recently, the commission was given responsibility for overseeing implementation of the Canada-US agreement on Great Lakes water quality, with goals of improving water quality in polluted areas and ensuring future protection of water quality. Table 1.5 lists the principal rivers of Canada and their tributaries.

The accompanying map shows major drainage basins of Canada. The Atlantic drainage basin is dominated by the Great Lakes-St. Lawrence system which drains an area of approximately 1 756 012 km² and forms a navigable inland waterway through a region rich in natural and industrial resources. From the head of Lake Superior to Belle Isle at the entrance of the Gulf of St. Lawrence is 3 669 km. The entire drainage area north of the St. Lawrence and the Great Lakes is occupied by the southern fringe of the Canadian Shield, a rugged, rocky plateau with many tributaries. These rivers and the St. Lawrence provide much of the electric power for the area's industries. South of the St. Lawrence, smaller rivers are important locally. The Saint John, for instance, drains a fertile area and provides most of New Brunswick's hydro power.

The Hudson Bay drainage basin is the largest and its main river is the Nelson. The Winnipeg River, a tributary of the Nelson via Lake Winnipeg, is completely developed for hydroelectric power but development of the Nelson itself is just beginning. The Saskatchewan River, tributary to the Nelson via Lake Winnipeg, drains the agricultural region of the mid-west and is a source for irrigation and hydroelectric power.

The Arctic drainage basin is dominated by the Mackenzie, one of the world's longest rivers. It flows 4 241 km from the head of the Finlay River to the Arctic Ocean and drains an area of approximately 1 812 992 km² in the three western provinces and northern territories. Except for a 26 km portage in Alberta, barge navigation is possible from Waterways on the Athabasca River to the mouth of the Mackenzie, a distance of 2 736 km.

Rivers of the Pacific basin rise in the mountains of the Cordilleran region and flow to the Pacific Ocean through steep canyons and over innumerable falls and rapids. They provide power for large hydroelectric developments and in season swarm with salmon returning inland to their spawning grounds. The Fraser River rises in the Rocky Mountains and, toward its mouth, flows through a rich agricultural area. The Columbia is an international river which falls 808 m during its course and thus has tremendous power potential. Although a considerable part of the United States potential has been developed, the Canadian portion of the basin remained relatively untouched until recent



years when three large reservoirs were built under the terms of the Columbia River Treaty. These reservoirs make it possible for British Columbia to develop up to 4 000 MW (megawatts) of hydroelectric generating capacity in the Columbia basin. The Yukon River, also an international river and the largest on the Pacific slope, has not yet been developed in Canada.

Utilization of inland water. Over 43% of all water withdrawn in Canada (excluding withdrawals associated with hydro projects) is for condenser cooling in steam-electric plants. About 99% is returned. Municipal use, including small industrial processors served by municipal systems, accounts for 10.5% of current water withdrawals. On average, approximately 75% of the water pumped into the system is discharged as storm and sanitary sewage containing waste materials.

Other industrial users, manufacturing and mining firms, account for 38% of total withdrawals of water and about 10% of that intake is consumed or lost. Discharged water is frequently returned to source in a highly polluted condition and may be unfit for most uses downstream. Canadian agriculture depends largely upon supplies of water from melting snow and rainfall. In many regions, however, such natural sources are inadequate. Agriculture requires 7.7% of the nation's total withdrawals annually for irrigation, stock watering and rural domestic use.

Hydroelectric power generation uses the kinetic energy of falling water to produce electricity. Except for evaporation losses from the surface of reservoirs, the water is not consumed or changed in any way. However, flooding of land for storage and interference with natural flow may have adverse effects.

Water transport is no longer the principal mode of transportation, but competes with railways, pipelines, aircraft and motor carriers. Water is still the most economical means of transporting bulky raw materials such as wheat, pulp and paper, lumber and minerals for export, especially in the Great Lakes–St. Lawrence and Mackenzie River regions.

Popularity of water-oriented recreational activities — swimming, boating, sightseeing, fishing, hunting, and water skiing — is growing as more leisure becomes available. Although provincial and federal governments produce recreation data, co-ordinated national information on the role of water in outdoor recreation is not yet available.

Fish and wildlife from river and lake systems make a vital contribution to Canada's economy. In addition to sport-fishing and hunting, inland waters support important commercial fisheries. Fish and wildlife require water of high quality. When water systems have multiple-purpose use, pollution can destroy these resources. In government agencies there has been increased work on water pollution problems. Universities are also developing programs in environment-related water research.

Coastal waters

1.1.3

Canada's coastline, over 243 000 km, comprises the following measurements — Mainland: Atlantic 15 841 km; Pacific 7 022 km; Hudson Strait 4 253 km; Hudson Bay 12 268 km; Arctic 19 125 km; total 58 509 km. Islands: Atlantic 29 251 km; Pacific 18 704 km; Hudson Strait 8 594 km; Hudson Bay 14 775 km; Northwest Territories south of Arctic Circle 22 209 km; Arctic 91 755 km; total 185 288 km.

Atlantic. Along this coastal area, the sea has inundated valleys, lower parts of the Appalachian Mountains and the Canadian Shield. The submerged continental shelf is distinguished by great width and diversity of relief. From the coast of Nova Scotia its width varies from 60 to 100 nautical miles, from Newfoundland 100 to 280 nautical miles at the entrance of Hudson Strait, and northward it merges with the submerged shelf of the Arctic Ocean. The outer edge varies in depth from 183 to 366 m. The overall gradient of the Atlantic continental shelf is slight but the whole area is studded with shoals, plateaus, banks, ridges and islands. The 73 m line is an average of 12 nautical miles from the Nova Scotia coast and is the danger line for shipping. The whole floor of the marginal sea is traversed by channels and gullies cutting deep into the shelf.

The topography of much of the Atlantic marginal sea floor was shaped by processes of glacial erosion and deposition. Large areas, however, undergo constant change because of continuous marine deposit of materials eroded by rivers, wave action, wind and ice.

Hudson Bay and Hudson Strait bite deeply into the continent. Hudson Bay is an inland sea 822 324 km² in area having an average depth of about 128 m; the greatest depth in the centre of the bay is 258 m. Hudson Strait separates Baffin Island from the continental coast and connects Hudson Bay with the Atlantic Ocean. It is 796 km long and from 69 to 222 km wide; its greatest depth of 880 m is close inside the Atlantic entrance. There are great irregularities in the sea floor but few navigational hazards, except in inshore waters.

Pacific. The marginal sea of the Pacific differs strikingly from other marine zones of Canada. The hydrography of British Columbia is characterized by bold, abrupt relief — a repetition of the mountain landscape. Numerous inlets penetrate the mountainous coasts for distances of 93 to 139 km. They are usually a nautical mile or two wide and very deep, with steep canyon-like sides. From the islet-strewn coast, the continental shelf extends from 50 to 100 nautical miles to its limit at depths of about 366 m. The sea floor drops rapidly, parts of the western slopes of Vancouver Island and the Queen Charlotte Islands lying only four nautical miles and one nautical mile, respectively, from the declivity. These detached land masses are the dominant features of the Pacific marginal sea. The region's numerous shoals and pinnacle rocks necessitate cautious navigation.

Arctic. The submerged plateau extending from the northern coast of North America is a major part of the great continental shelf surrounding the Arctic Ocean, on which lie all

the Arctic islands of Canada, Greenland, and most of the Arctic islands of Europe and Asia. This shelf is most uniformly developed north of Siberia where it is about 500 nautical miles wide; north of North America it surrounds the western islands of the archipelago and extends 50 to 300 nautical miles seaward from the outermost islands.

The floor of the submerged part of this continental margin is nearly flat to gently undulating, with isolated rises and hollows. Most of it has an average slope seaward of about one-half degree, with an abrupt break at the outer edge to the continental slope whose declivity is commonly six degrees or more. From the Alaskan border eastward to the mouth of the Mackenzie River the shelf is shallow and continuous with the coastal plain on the mainland; its outer edge is at a depth of about 64 m and about 40 nautical miles offshore. This shelf is continuous with that north of Alaska and Siberia. Near the western edge of the Mackenzie River delta it is indented by the deep Herschel Sea Canyon, whose head comes within 15 nautical miles of the coast. Between Herschel Sea Canyon and Amundsen Gulf, typical continental shelf features are replaced by the submerged portion of the Mackenzie River delta, which forms a great pock-marked undersea plain, most of it less than 55 m deep, up to 75 nautical miles wide and 250 miles long.

North and east of the submerged portion of the Mackenzie River delta, the continental shelf is more deeply submerged than that off the mainland and Alaska. Its gently undulating surface is generally 366 m or more below sea level, and most of the well-defined continental shoulder is over 549 m deep, giving way to the smooth continental slope which extends without significant interruption to the abyssal Canada Basin at about 3 658 m. The deeply submerged continental shelf runs along the entire west coast of the Canadian Arctic Archipelago from Banks Island to Greenland. All major channels between the islands — Amundsen Gulf, M'Clure Strait, Prince Gustav Adolf Sea, Peary Channel, Sverdrup Channel and Nansen Sound — have flat floors at about the same depth as the shelf and appear to enter it at grade, but a few local irregularities may be the result of glacial action. The only deep indentation known to cut the continental slope or continental shelf off the archipelago is one sinuous canyon that heads off Robeson Channel at the northeastern end, close to Greenland. Submerged sides of the channels of the archipelago, and slopes from the islands' western shores to the inner edge of the deeply submerged shelf, are marked in many places by a series of steps or terraces.

1.1.4 Islands

Canada's largest islands are in the North in an arctic climate. The northern group extends from the islands in James Bay to Ellesmere Island which reaches 83°07'N. Those in the District of Franklin, north of the mainland of Canada, are generally referred to as the Canadian Arctic Archipelago; those in the extreme north — lying north of 73°30'N — are known as the Queen Elizabeth Islands.

The largest and most important islands on the West Coast are Vancouver Island and the Queen Charlotte Islands, but the coastal waters are studded with many small rocky islands. The largest off the East Coast are the island of Newfoundland, the province of Prince Edward Island, Cape Breton Island of Nova Scotia, Grand Manan and Campobello islands of New Brunswick and Anticosti Island and the Madeleine group of Quebec.

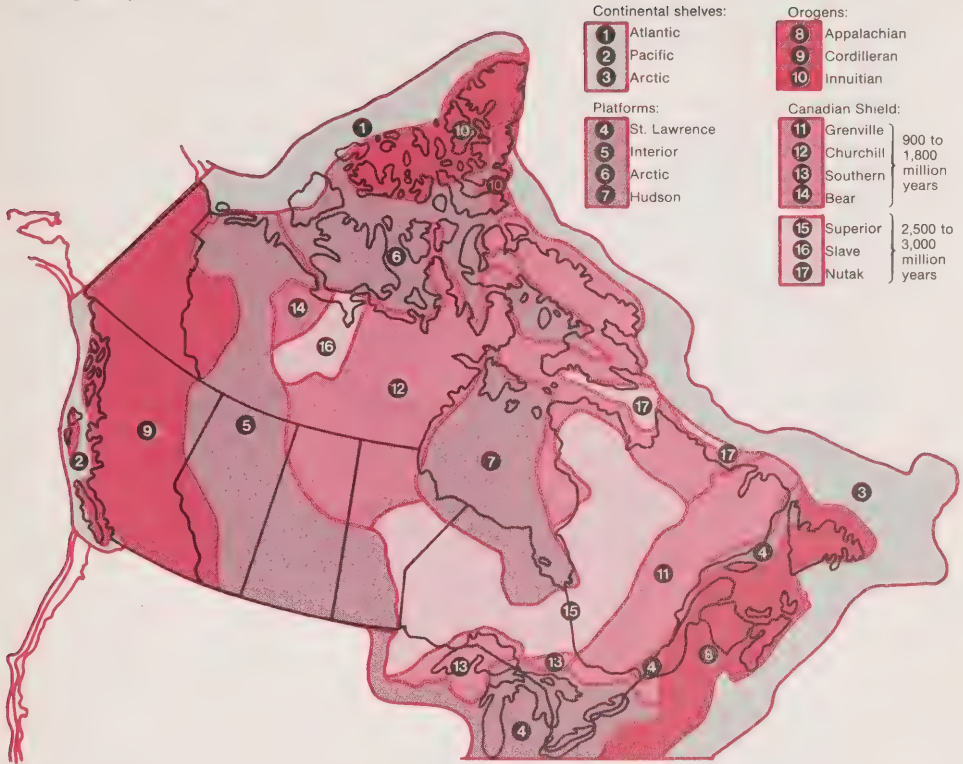
Notable islands of the inland waters include Manitoulin Island, 2 766 km² in area, in Lake Huron, the so-called Thirty Thousand Islands of Georgian Bay and the Thousand Islands in the outlet from Lake Ontario into the St. Lawrence River.

The areas of principal islands by region are given in Table 1.6.

1.1.5 Surveying and mapping

The surveys and mapping branch of the energy, mines and resources department is Canada's major mapping agency. The branch compiles topographic maps, aeronautical charts, thematic maps and base maps of various scales for specialized uses by other agencies to provide geological, aeromagnetic, electoral and land-use information. The geodetic survey division establishes and maintains the national system of control

Geological provinces



surveys to serve the needs of mapping, charting and boundary surveys and geoscience research. Topographical surveys has completed the mapping of Canada at the scale of 2.0 cm to 5.0 km (1:250,000) and is now mapping the country at the scale of 2.0 cm to 1.0 km (1:50,000). All of the settled areas and many regions of northern development, amounting to slightly more than half of the country, are mapped at this larger scale. There are 690 maps available at the scale of 4.0 cm to 1.0 km (1:25,000) covering all major cities and their suburbs. Photomaps derived from air photographs using the latest methods of photogrammetric technology are also available covering some of the areas mapped at the two largest scales, 2.0 cm to 1.0 km and 4.0 cm to 1.0 km. The legal surveys division is responsible for the technical management of legal surveys of land under federal jurisdiction, such as the northern territories, national parks and Indian reserves. It also executes such surveys on behalf of administering departments, collaborates in the demarcation of provincial boundaries, prepares descriptions of electoral districts and generally provides land-surveying services to other departments. The geographical services directorate ensures the availability of geographical information in the national context and the provision of cartographic advice and assistance to other federal programs. Among the products of this directorate are the *National atlas of Canada* and the aeronautical charts and related information required for the regulation, safety and development of Canadian civilian and military aviation.

A permanent committee on geographical names deals with all questions of geographical nomenclature affecting Canada and advises on research and investigation into the origin and usage of geographical names. Its membership includes representatives of federal mapping agencies and other federal offices concerned with nomenclature and representatives appointed by each province. The committee's functions were

redefined in 1969 (order-in-council PC 1969-1458). The order-in-council recognizes that the provinces have exclusive rights to make decisions on names in lands under their jurisdiction. The committee is administered by energy, mines and resources.

1.2 Geology

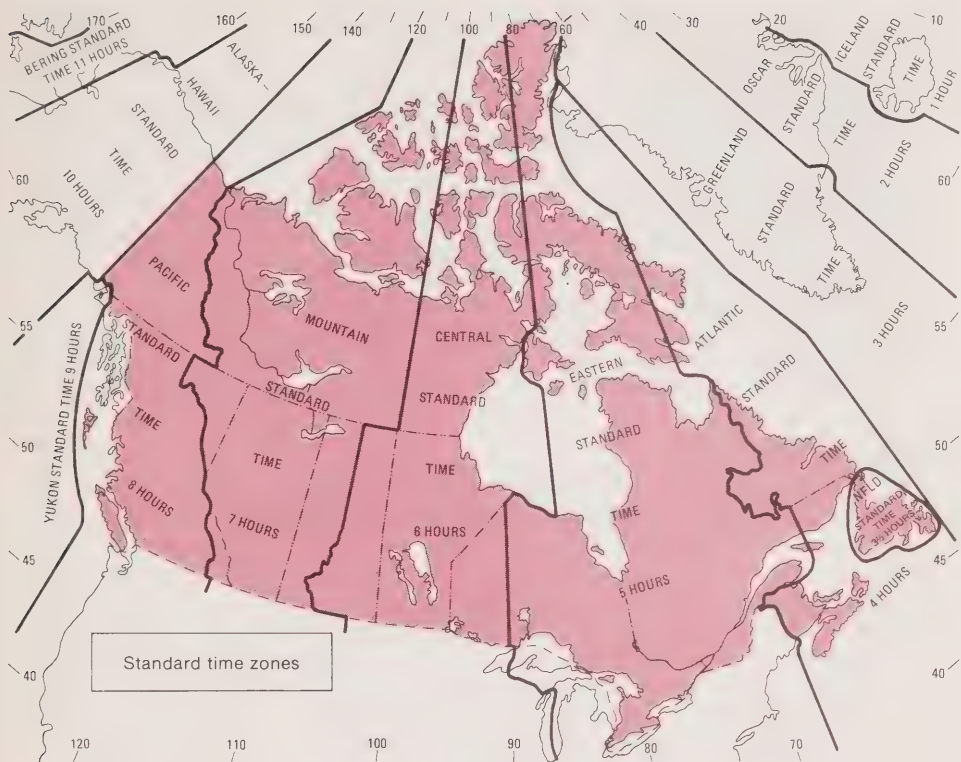
Canada is composed of 17 geological provinces that may be grouped under four main categories — continental shelf, platform, orogen and shield. The geologically youngest provinces, the Atlantic, Pacific and Arctic continental shelves, are made up of little-deformed sediments and volcanics, mainly of Mesozoic and Cenozoic age, which are still accumulating along the margins of the present continental mass. The St. Lawrence, Interior, Arctic and Hudson platforms are formed of thick flat-lying Phanerozoic strata covering large parts of the crystalline basement rocks of the continental interior, the extension of the Canadian Shield. The Appalachian, Cordilleran and Inuitian orogens are mountain belts of deformed and metamorphosed sedimentary and volcanic rocks mainly Phanerozoic and Proterozoic in age, intruded by granitic plutons. They were produced during the various Phanerozoic orogenies 50 to 500 million years ago. Of the seven provinces comprising the Precambrian Canadian Shield, the Grenville, Churchill, Southern and Bear embrace the orogenic belts produced during the Proterozoic orogenies, 900 to 1,800 million years ago. The remaining three, the Superior, Slave and Nutak provinces, were deformed during the Archean Eon, and include the oldest continental crust known in Canada, 2,500 to 3,000 million years old. The Precambrian orogenic belts have many features in common with those of Phanerozoic age but are so deeply eroded that the mountainous parts have been reduced to plains or lowlands and in many places the basement crystalline rocks upon which the sediments and volcanics initially accumulated are now exposed.

The land and freshwater area is 9 922 330 km², but Canada also includes within this area some 2 222 210 km² of marine waters. The rocks beneath have geological features akin to adjacent regions on shore. The submarine area of the bordering continental shelves is about 1 354 564 km² and of the continental slopes, 1 458 163 km². Altogether, this embraces 14 312 274 km², about 3% of the surface of the globe. For an account of Canada's geology see the *Canada Year Book 1973* pp 8-14.

1.3 Climate

Climate depends primarily on radiative exchanges between the sun, the atmosphere and the surface of the earth. Regional climates of Canada are controlled by the geography of North America and by the general movement of air from west to east. The Pacific Coast is cool and fairly dry in summer but mild, cloudy and wet in winter. Interior British Columbia has climates varying more with altitude than latitude: wet windward mountain slopes with heavy snows in winter, dry rainshadow valleys, hot in summer, and high plateaus with marked day to night temperature contrasts. Interior Canada, from the Rocky Mountains to the Great Lakes, has a continental-type climate with long cold winters, short but warm summers and scanty precipitation. Southern portions of Ontario and Quebec have a humid climate with cold winters, hot summers and generally ample precipitation all year. The Atlantic provinces have a humid continental-type climate although in the immediate coastal areas there is a marked maritime effect. On the northern islands, along the Arctic Coast and around Hudson Bay, arctic conditions persist, with long frigid winters and only a few months with temperatures averaging above freezing. Precipitation is light in the tundra area north of the treeline. Between the arctic and southern climates boreal Canada has a transitional type climate with bitter long winters but appreciable summer periods. Precipitation is light in the west, but heavier in the Ungava Peninsula.

Climatic data. Temperature and precipitation data for various districts are shown in Table 1.7. Additional data from hundreds of stations and reports concerning the climates of Canada and the regions are available from the atmospheric environment service of the environment department. Definitions, methods of observation and the instrumentation used are included in the department's publications.



Time zones

1.4

Based on atomic clocks, Canada's time is established by the National Research Council with a precision of one ten-millionth of a second per day, and co-ordination with other countries is maintained to the same precision through the Bureau international de l'Heure in Paris. Irregularities in the rotation of the earth give rise to a difference between mean solar time and atomic time, and a leap second is introduced to ensure that this difference, called DUT1, does not exceed 0.8 seconds. At present DUT1 is decreasing by about one-twelfth of a second per month, and positive leap seconds were necessary on June 30, 1972 and on December 31 of each year from 1972 to 1978.

A continuous broadcast of Canadian time is made on station CHU, Ottawa (3 330 kHz, 7 335 kHz, 14 670 kHz), with a bilingual voice announcement each minute, and with a split pulse code to give the value of DUT1. Once a day the time signals are broadcast across Canada on the CBC networks.

Standard Time, adopted at a world conference at Washington, DC in 1884, sets the number of time zones in the world at 24, each zone ideally extending over one twenty-fourth of the surface of the earth and including all the territory between two meridians 15° of longitude apart. In practice, the zone boundaries are quite irregular for geographic and political reasons. Universal Time (UT) is the time of the zone centred on the zero meridian through Greenwich, England. Each of the other time zones is a definite number of hours ahead of or behind UT to a total of 12 hours, at which limit the international date-line runs roughly north-south through the mid-Pacific.

Canada has six time zones. The most easterly, Newfoundland standard time, is three hours and 30 minutes behind UT, and the most westerly, Pacific standard time, is eight hours behind UT. From east to west, the remaining zones are called Atlantic,

Eastern, Central and Mountain. In October 1973 the nine hour Western Yukon time zone was eliminated by order of the Yukon Territorial Council, placing the entire Yukon eight hours behind UT.

Legal authority for the time zones. Time in Canada has been of provincial rather than federal jurisdiction. Each of the provinces and territories has enacted laws governing standard time and these laws determine the time zone boundaries. Lines of communication, however, have sometimes caused communities near the boundary of a time zone to adopt the time of the adjacent zone, and in most cases these changes are acknowledged by amendments to provincial legislation. Official time for dominion official purposes is the responsibility of the National Research Council of Canada.

Daylight saving time. Most provinces have legislation controlling provincial or municipal adoption (or rejection) of daylight saving time; in the other provinces authority is left to the municipalities. By general agreement, daylight saving time, where it is observed, is in force from the last Sunday in April until the last Sunday in October.

1.5 Public land

The total area of Canada and areas of individual provinces and territories are classified by tenure in Table 1.8. All lands, except those privately owned or in process of alienation, are Crown lands under the jurisdiction of either federal or provincial governments.

Federal public land. Public lands under federal government administration comprise lands in the Northwest Territories including the Arctic Archipelago and the islands in Hudson Strait, Hudson Bay, James Bay and Ungava Bay, lands in Yukon, ordnance and admiralty lands, national parks and national historic parks and sites, forest experiment stations, experimental farms, Indian reserves and, in general, all public lands held by the several departments of the federal government for various purposes connected with federal administration. These lands are administered under the Territorial Lands Act (RSC 1970, c.T-6) and the Public Lands Grants Act (RSC 1970, c.P-29).

The largest areas under federal jurisdiction are in the Northwest Territories and Yukon where only 241 km² of a total area of 3 916 007 km² are privately owned for residential purposes and 3 877.5 km² are administered by the territorial governments.

Provincial and territorial public land. Public lands of Nova Scotia, New Brunswick, Quebec, Ontario and British Columbia (except the "railway belt" and Peace River block) have been administered since Confederation by the provincial governments. In 1930, the federal government transferred the unalienated portions of the natural resources of Manitoba, Saskatchewan and Alberta and of sections of British Columbia to the respective governments, and all unalienated lands in Newfoundland, except those administered by the federal government, became provincial public lands under the terms-of-union on March 31, 1949. All land in Prince Edward Island has been alienated except 344 km² under federal or provincial administration.

Transfer by the federal government of land within and immediately surrounding established communities in the Northwest Territories and the Yukon Territory to the respective territorial governments began in September 1970 when four such transfers were completed, three in the Northwest Territories and one in Yukon, for a total of 1 722 km². Since then transfers were completed in the following areas: Yukon: Faro 236 km², Beaver Creek 5 km², Mayo 10 km², Teslin 2.6 km², Carmacks 31 km², Destruction Bay 5 km², Carcross 24.9 km², Watson Lake 5 km²; Northwest Territories: Frobisher Bay 132 km², Aklavik 21 km², Fort Simpson 363 km², Fort Smith 57 km², Fort Providence 210 km², Hay River-Enterprise 368 km², Norman Wells 453 km², Fort McPherson 80 km², Fort Franklin 65 km², Fort Good Hope 57 km², Pine Point 29.8 km².

Early in 1978 a new policy was adopted whereby transfers of administration of territorial lands are limited to those required for specific planned community development. Thus small blocks of land may from time to time be transferred to the territorial governments; by May 1979 about 10 km² had been transferred.

Federal parks

1.5.1

Parks Canada includes national parks, national historic parks and sites, and agreements for recreation and conservation. Parks Canada has its headquarters in Ottawa but operational responsibility in five regions: the Atlantic regional office in Halifax, the Quebec regional office in Quebec City, the Ontario regional office in Cornwall, the Prairie regional office in Winnipeg and the Western regional office in Calgary.

National parks. Canada's national parks system, encompassing more than 129 499 km², is the largest in the world. It has grown from the federal government's efforts, with co-operation of provincial and territorial governments, to preserve natural areas of scenic and biological interest for the public.

In 1885 the Canadian government reserved from private ownership the mineral hot springs of Sulphur Mountain in what is now Banff National Park. Two years later this 26 km² reserve was extended to 673 km² and named Rocky Mountains Park, the first federal park in Canada.

Two land reserves in southern British Columbia — Yoho and Glacier — were made by the federal government in 1886, a reserve of 140 km² in the Waterton Lakes area of southern Alberta in 1895, and an area of 12 950 km² around Jasper, Alta., in 1907. These four western mountain reserves, together with Rocky Mountains Park, formed the nucleus of the national park system after the Dominion Forest Reserves and Parks Act was passed in May 1911. A national parks branch was created to protect, administer and develop the parks.

By 1930 there were nine more national parks. Three in Ontario consisted of federal Crown land or land held in trust for Indians: St. Lawrence Islands National Park, Point Pelee National Park and Georgian Bay Islands National Park. Prince Albert National Park in Saskatchewan and Riding Mountain National Park in Manitoba were former

Canada has the largest system of national parks in the world and provincial parks set aside for enjoyment now and in the future. Together they show nature at its best, preserved for all to cherish.

federal forest reserves. Elk Island National Park near Edmonton was established as a preserve for buffalo and Wood Buffalo National Park, a 44 807 km² area straddling the Alberta–Northwest Territories border, as a refuge for the largest surviving herd of buffalo in North America. In British Columbia two scenic areas were preserved — Mount Revelstoke National Park and Kootenay National Park.

Between 1930 and 1969, national parks were established in the four Atlantic provinces: Cape Breton Highlands and Kejimikujik in Nova Scotia; Prince Edward Island National Park in Prince Edward Island; Fundy and Kouchibouguac in New Brunswick; and Terra Nova in Newfoundland. By 1972 eight more were added: three in Quebec; one each in Newfoundland, Ontario, British Columbia and Yukon; and two in Northwest Territories.

Details of national parks with their description, size and location are given in Table 1.9. Further information and a location map are available in *Canada's national parks* published by Parks Canada.

For parks within provinces, land is acquired by the province acting within a federal-provincial agreement to establish a national park. These lands are transferred to Canada and the establishment of the park is made formal by Parliament. In Yukon and Northwest Territories, lands have been reserved from all alternative disposition by orders-in-council and proclamation.

In 1971, *A national parks system planning manual* was published, in recognition that new and comprehensive measures were needed to preserve Canada's natural heritage. With a view to protecting not only unique and outstanding areas of the Canadian land and seascapes but also those representative of its physical, biological, and oceanographic characteristics, 48 distinctive natural regions were identified for which natural history themes were defined.

From April 1, 1977 to March 31, 1978, there were 18.4 million visits to the national parks. Visitors to the parks can participate in activities ranging from guided walks and canoeing in summer to cross-country skiing and snowshoeing in winter.

National historic parks and sites. National historic parks and sites commemorate persons, places and events of major significance in Canada's historical development.

The National Parks Act of 1930 provided that the Governor-in-Council may set apart any land as a national historic park to commemorate a historic event, or preserve any historic landmark or any object of historic, prehistoric or scientific interest of national importance. The Historic Sites and Monuments Act of 1953 and its amendments in 1955 and 1959 provided the statutory base and defined the role of the historic sites and monuments board. The national historic parks and sites branch develops, interprets, operates and maintains historic parks and sites and acts as secretariat for the board.

Parks Canada specifies that for commemoration, a site or structure must be closely associated with a person, place or event of national historical importance, or must illustrate the cultural, social, political, economic or military patterns of history or of a prehistoric people or archeological discovery, or be valuable as an example of architecture. The policy includes guidelines for providing visitor services, interpretive programs and information. Standards are established for preserving, restoring and reconstructing structures which stress authenticity in materials used and in furnishings and artifacts. The policy recognizes the need for a comprehensive program to give thematic and geographical representation and to establish long-range planning.

The historic sites and monuments board may recommend that sites, buildings and other structures of national importance be developed as national historic parks or historic sites or commemorated by the erection of plaques or distinctive monuments. Suggestions for historic sites and parks come from many sources — the general public, members of Parliament, historical societies and other groups, department staff and board members. Before a suggestion is considered, a background paper is prepared by the national historic parks and sites branch research staff. The board determines the significance of the site and makes its recommendation to the minister. If approved, a development plan is prepared.

The national historic parks and sites branch has been instrumental in creating 80 national historic parks and major sites, over 53 operational, and in commemorating with plaques more than 700 persons and events of national (as opposed to local or regional) significance. Negotiations are conducted with provinces for acquiring other sites. The department has entered into 40 cost-sharing agreements with provincial and municipal governments and with incorporated non-profit societies for acquiring and restoring architecturally or historically significant buildings and structures on the understanding that the other party will pay the balance of acquisition and restoration costs and will maintain the buildings in perpetuity. A number of monuments are maintained by the national historic parks and sites branch.

From April 1, 1977 to March 31, 1978 there were 4.3 million visits to Canada's national historic parks and sites. Details on location and characteristics of national historic parks and sites may be obtained from Parks Canada.

The Canadian inventory of historic building begun in 1970 is a computerized program to survey, analyze and categorize old buildings. Exteriors of about 200,000 buildings have been surveyed and almost all have been indexed; interiors of approximately 1,800 of these structures have been surveyed.

Heritage Canada is an independent corporation concerned with conserving buildings, sites and natural and scenic areas. It received an initial federal capital endowment of \$12 million in 1972; interest on this fund is used to further its work. Heritage Canada enlists the support of the general public, foundations and corporations.

National marine parks. Canada is bounded by three oceans and has the largest volume of fresh water in the world. Extension of the national parks system to represent the Pacific, Arctic and Atlantic coasts and inland waters, with identification of the marine natural regions and marine natural history themes is an objective.

National landmarks. Preservation of specific natural wonders, such as the Chub crater in Northern Quebec, the frozen pingos of the Arctic, semi-desert and eroded hills of the Prairies and mountain caves and seascapes, has been proposed under a program of national landmarks.

Agreements for Recreation and Conservation (ARC). Public agencies, organizations and individuals are actively protecting and preserving heritage resources. To provide Canadians new opportunities to appreciate and understand their natural, cultural and historical heritage, Parks Canada created a co-operative program, agreements for recreation and conservation, which focuses principally on heritage canals and co-operative heritage areas. Initiatives would be established, developed and managed according to terms and conditions of co-operative agreements between Parks Canada and other agencies.

Exemplified by the Rideau-Trent-Severn waterway, the contemporary importance of heritage canals as recreational waterways emphasizes not only navigation but also visitor participation in a diversity of recreational activities. Heritage canals have acquired new significance by illustrating historical development and early engineering technology.

Co-operative heritage areas contain natural and cultural heritage resources which are nationally significant. These resources must exist in a condition and setting permitting continued co-operative protection. Such initiatives may have a concentration of distinctive natural and cultural resources or display examples of one particular type of heritage resource such as historic land and water routes, urban conservation areas, rural cultural landscapes or wild rivers. Each agreement for a co-operative heritage area concentrates on a combination of resources and is designed to achieve the joint objectives of the participants.

World heritage sites. Canada is one of 38 nations that ratified the UNESCO World Heritage Convention to identify and protect cultural and natural properties throughout the world considered to be of outstanding universal value. In September 1978 Nahanni National Park in Northwest Territories and L'Anse aux Meadows in Newfoundland were the first Canadian sites named to the world heritage list.

Gatineau Park. In addition to the national parks a 351 km² recreation area, Gatineau Park north of Ottawa and Hull, is being developed by the federal government as part of the national capital region under the National Capital Commission. It is a wilderness area of great potential, extending northward from Hull for 56 km. With 40 km of parkway, magnificent lookouts, lakes, fishing streams, beaches, picnic areas, camping sites, skiing and walking trails it is one of the finest recreation areas in Canada, enjoyed by 1.8 million visitors each year. A master plan for further development is under way.

Provincial parks

1.5.2

All provincial governments have established parks within their boundaries. Some are wilderness areas set aside so that portions of the country might be retained in their natural state. Most of them, however, are smaller areas of scenic interest, easily accessible and equipped or slated for future development as recreational parks with camping and picnic facilities.

Newfoundland. In the early 1950s Newfoundland's first organized recreational facilities were roadside picnic sites. The department of tourism currently administers 81 units including camping parks, day-use parks, 17 inland and coastal public beaches, a wilderness area, and internationally significant bird sanctuaries in the North Atlantic. Sir Richard Squires Memorial Park and River of Ponds Park are located on Atlantic salmon rivers while others such as Bellevue Beach Park and Chance Cove Park are on Newfoundland's coastline.

Prince Edward Island. In the provincial park system, 40 areas comprise five classes of parks: nature preserves, natural environment parks, recreation parks, wayside/beach access, and historic parks. The parks, maintained by the tourism, parks and conservation department, enhance the scenic drives which loop coastal areas.

There are two recreation parks with major emphasis on golf, tennis, lawn bowling and accommodations: Brudenell River in Kings County and Mill River (under development) in Prince County.

Nova Scotia. The provincial parks system, administered by the lands and forests department, parks and recreation division, started in the late 1950s with roadside sites. This has expanded to 19 overnight campgrounds, 61 day-use picnic and roadside parks, and 20 day-use beach parks. Most of the parks are easily accessible from main highways. Campgrounds contain from 15 to 165 sites in parks of from 11 to 695 ha (hectares). The picnic and beach parks range from 0.5 to more than 596 ha. Picnic and campground facilities are primitive with tables, fire grills, dumping stations, vault privies and water.

New Brunswick. The provincial park system, administered by the tourism department, includes 23 recreational parks ranging from 10 to 567 ha, 21 rest areas, six campground parks, six beach parks, a wildlife park and a resource park. Most are in rural areas adjacent to or easily accessible from main roads.

Several parks have organized activity, lifeguards and interpretation programs. Mactaquac, near Fredericton, one of two year-round parks, boasts a championship 18-hole, 6 428-m golf course and two marinas. There are winter facilities for snowmobiling, cross-country skiing, snowshoeing, tobogganing, skating, sleigh rides and camping. Sugarloaf, near Campbellton, the other year-round park, features an alpine ski hill with three lifts, cross-country skiing, skating, snowmobiling, tobogganing and tennis. Campobello provincial park on Campobello Island has a nine-hole, 3 008-m golf course, lodge and camping.

Quebec. The new Parks Act proclaimed in December 1977 provides for conservation parks and recreational parks. The Wildlife Conservation Act was amended in 1978 to allow for establishing wilderness preserves, development and conservation areas and controlled management areas.

Management of parks and reserves comes under regional branches, regional operations directorate. The parks branch is responsible for regulating, programming, standardizing, monitoring and evaluating the activities. Parks and reserves are important to tourism. In 1978 the camping record listed 1,247,000 person-days, canoeing 28,900, hiking 196,800, and cross-country skiing and snowshoeing over 800,000. In 1978-79, 7.1 million visitor-days were recorded.

Ontario. There are 128 provincial parks for public use in Ontario and 138 special recreation areas or areas held in reserve for development. The provincial park system, begun in 1893 with Algonquin Park, now comprises 50 069 km².

The provincial park system provides a variety of recreation opportunities and preserves significant natural, cultural and recreational environments. Parks are classified into six categories: wilderness, natural environment, recreation, nature reserve, waterway and historical. Following are examples of each class. Polar Bear park, 24 085 km² in the Hudson Bay lowland bordering Hudson Bay and James Bay, is a wilderness park containing boreal forest, tundra and arctic flora and fauna. Algonquin, a natural environment park, has 17 picnic and camping areas accessible by car and 7 655 km² offering canoeing and hiking opportunities. In Southern Ontario, the Bronte Creek recreational park has tennis courts, man-made swimming lake, outdoor artificial skating rink, toboggan hill and bike paths, hiking and cross-country ski trails. Ouimet Canyon nature reserve park preserves a 150-m wide, 100-m deep canyon in which arctic plants flourish far from their usual habitat. The Mattawa waterway park follows 40 km of an old Indian and voyageur route. The Peterborough petroglyphs, a historical park, contains one of the largest examples of prehistoric rock carving in Canada.

In 1978 there were 10.5 million visitors to provincial parks including 1.5 million campers using 20,000 campsites.

Manitoba. The parks division of the mines, natural resource and environment department is responsible for the 12 provincial natural parks, 45 provincial recreation parks, two provincial heritage parks, 104 provincial wayside parks and numerous special use parks, all comprising over 10 230 km². The parks division constitutes, establishes

and maintains a system of resource-based parks and related land-use areas for the enjoyment and recreation of Manitoba citizens and visitors.

Saskatchewan. In 1931 Duck Mountain, Cypress Hills and Moose Mountain became the first provincial parks. Now 17 provincial parks represent all ecological segments, classified as wilderness, natural environment or recreation. The social importance of outdoor recreation and heritage appreciation is reflected in regional and historic parks. Regional parks were designed for outdoor recreational use in 99 southern Saskatchewan communities. Nine historic parks are monuments to early trade, conflict and settlement.

Alberta provincial parks, in existence since 1932, are administered by a provincial parks branch. There are 54 provincial parks and three wilderness areas, Whitegoat, Siffleur, and Ghost River. Six natural areas and Willmore wilderness park are administered by the energy and natural resources department. Major provincial parks include Kananaskis, Cypress Hills, Dinosaur, Lesser Slave Lake and Writing-on-Stone.

British Columbia. At the end of 1978 British Columbia had 321 parks, 25 recreation areas, and one wilderness conservancy, totalling 4 481 749 ha in area. BC's park system began in 1911 with the establishment of Strathcona provincial park, 227 211 ha, in central Vancouver Island. The park system has steadily expanded to include vast wilderness areas, camping and picnicking sites, downhill and cross-country ski areas, a comprehensive marine park system, historic parks and sites, a famous canoe circuit, wildlife sanctuaries, and outstanding examples of the province's physical features. In 1978 there were 11 million visits to the parks.

The national capital region

1.5.3

Canada's capital lies on the Ottawa River below the Chaudière Falls and just above the confluence of the Rideau and Gatineau rivers. Ottawa comes from Outaouac or Outaouais, an Indian tribe from Lake Huron which traded with the French in the 17th century.

The United Province of Canada, following its formation in 1841, shuttled its capital among Kingston, Toronto, Montreal and Quebec while trying to agree on a permanent site. Queen Victoria settled the dispute by choosing Ottawa in 1858. In 1866 the government of the Province of Canada moved to Ottawa. The next year the Parliament of the new Dominion of Canada met for the first time.

Little effort was made to preserve the capital's natural beauty until the Ottawa Improvement Commission was formed in 1899. The present National Capital Commission was formed in 1959 to carry out the master plan conceived for the national capital region by town planner Jacques Gréber.

Ottawa and Hull comprise the core of the national capital region, an area of about 4 662 km² in Ontario and Quebec with a population of about 660,000. Industrial development in the region is limited. A large proportion of the work force is employed by the federal government.

Although the terms of reference of the National Capital Commission are "to prepare plans for and assist in the development, conservation and improvement of the national capital region in order that the nature and character of the seat of the Government of Canada may be in accordance with its national significance," the commission does not have jurisdictional authority over any municipal or regional authorities or the two provincial governments concerned. Most matters affecting the municipalities — planning, zoning, land use, building density, public transit, parking and construction of streets, arterial roads and highways — are within their sole jurisdiction, subject only to provincial government approval. The commission, in its development efforts, depends essentially upon the co-operation of each municipality and provincial government.

In recent years, the efforts of the commission have focused on developing a unified and lively core for the capital. At a constitutional conference in Ottawa in 1969, the federal and provincial first ministers declared the cities of Ottawa and Hull and their surrounding areas to be the Canadian capital region. Almost immediately, work began to remove the economic disparity between Hull and Ottawa; land was acquired in Hull for a federal building program to house various government departments.

1.6 The environment

The federal environment department has the responsibility to initiate government-wide programs and co-ordinate efforts related to environmental protection. It provides specialist advisory services to other departments in setting up programs and in developing regulations under federal acts assigned to other ministries.

The federal environmental protection program deals with treatment and disposal of waste water, solid waste management, air pollution, noise pollution and other threats to environmental quality.

In water pollution control, main objectives are: reduction of existing pollution and prevention of new problems; achievement of regional water quality objectives; and development of technologies to solve water pollution control problems more economically.

Broad objectives of air pollution control are to preserve, restore or enhance the quality of air in Canada. The department evaluates information on pollution sources; develops abatement programs for stationary and mobile air pollution sources; prepares regulations on the amount of lead in leaded gases and defines the limits of lead and phosphorus in unleaded grades of gasoline; defines national emission standards for smelters, industrial plants, mines and mills; and maintains a mobile motor vehicle emission testing facility.

The environmental contaminants program is responsible for managing hazardous materials and developing codes of good practice and guidelines for identifying, transporting, storing and disposing of hazardous materials. Under the Environmental Contaminants Act the federal government may provide for control of chemicals that may be disseminated, are persistent and harmful to health or environment.

The federal government is committed to cleaning up pollution at federal facilities within a reasonable time. Clean-up projects have dealt with water, air, noise, dust and solid waste pollution problems at airports, government offices, laboratories, grain elevators, defence bases, parks, ships and harbours.

An interdepartmental committee on the environment is the primary forum for interdepartmental consultation on environmental and related resource issues.

1.6.1 Federal-provincial programs

To develop co-operative action, the environment department is developing, with the provinces, federal-provincial accords for protection and enhancement of environmental quality. These are viewed as umbrella agreements under which specific agreements on environmental action may be signed. Some federal-provincial programs follow:

Assessments of potential environmental impact of major projects in which the federal government has an interest are carried out by federal departments in co-operation with provincial and territorial governments.

A national air pollution surveillance network established under the Clean Air Act consists, with certain exceptions, of monitoring stations operated by provincial governments using equipment loaned by the federal government.

Federal-provincial agreements under the Canada Water Act provide for water basin management programs and include agreements for joint studies in specific areas.

Many other formal and informal federal-provincial programs are related to specific aspects of renewable resources and the environment such as fisheries, forest and wildlife management, hydrometric data gathering, flood damage assistance and flood control, forest pest control and weather forecasting.

Non-recurring joint programs are developed from time to time. An example is the Canada/Ontario study to determine Great Lakes shoreline damage resulting from high water levels and to provide the basis for recommendations on long-term remedial and protective measures.

1.6.2 International programs

Canada belongs to a 17-member international council for exploration of the sea which encourages and co-ordinates studies of marine environment with particular reference to

living resources in the North Sea and North Atlantic. Canada is also a member of 10 international fisheries commissions which investigate specific living marine resources in defined areas.

Canada participates in the international hydrological program set up under UNESCO to facilitate a better scientific understanding of hydrological phenomena. Canada also participates in the operational hydrological program set up under World Meteorological Organization auspices.

In 1974 the World Health Organization designated the Canada Centre for Inland Waters (CCIW) as its international collaboration centre for surface and groundwater quality.

In 1977 Canada played a leading role in the United Nations water conference in Argentina and took part in the UN conference on growth of desert lands in Nairobi.

Canada has also been active in the Intergovernmental Maritime Consultative Organization (IMCO), a specialized agency of the UN, particularly on the marine environment protection committee.

Canada was deeply involved in preparations for the third UN conference on the law of the sea and in sessions in New York (1973), Caracas (1974), Geneva (1975) and New York (1976). Among issues dealt with were the following sovereign rights over: resources of the continental shelf, management of living resources in coastal waters, marine environment of coastal states, scientific research in zones of maritime jurisdiction, and the disposition of seabed riches beyond national jurisdiction for the benefit of mankind.

Canada is a member of the governing council of the United Nations Environment Program, the only multilateral intergovernmental body established solely to deal with global and regional environmental issues. It is essentially a co-ordinating body rather than an operational one. Its work program includes human settlements and human health, ecosystems, environment and development, oceans, energy and natural disasters.

Canada also participates in activities of the senior advisers on environmental problems, one of the principal subsidiary bodies of the UN Economic Commission for Europe (ECE). This group agreed to set up a co-operative program on the long-range transport of air pollutants and a task force on recycling of municipal and industrial solid wastes. The secretariat was asked to prepare a proposal for a future work program on low- and non-waste technology.

Canada has continued to participate in the UNESCO program on man and the biosphere. As a member of the international co-ordinating council, Canada has been influential in injecting four social science concerns: urbanization and industrialization, agricultural and forestry management practices, coastal ecosystems, and Arctic and isolated area development.

The Organization for Economic Co-operation and Development established an environment committee to examine common problems related to the natural and urban environment. This committee recommended adoption of the polluter pays principle as well as limitations in use of polychlorinated biphenyls (PCBs). It approved work in recycling and waste prevention, and economic incentives in waste management, air pollution, water pollution, urban environment and energy. Canada has participated actively in this committee.

Canada is also a member of the North Atlantic Treaty Organization's committee on challenges of modern society. In pilot projects one country accepts leadership for a particular problem and only countries with sufficient interest participate. Canada was the lead country in a project on inland water pollution, completed in 1974, and in 1978 in a nutrition and health project. Canada also participates in projects on waste water treatment, disposal of hazardous wastes and air pollution assessment.

Canada is a member of the World Weather Watch, and has set up nine stations of a planned network of 11 for monitoring air pollution in non-urban areas. In co-operation with some provinces, Canada is providing air quality data for Canadian cities as part of a World Health Organization program. Canada also contributed to a global investigation of the pollution of the marine environment of the Intergovernmental Oceanographic

Commission, participated in a group of experts on scientific aspects of marine pollution and helped to develop a global environmental monitoring system, an integral part of the Earthwatch program.

1.6.3 Environmental assessment and review process

A federal environmental assessment review office administers this process which requires consideration of environmental consequences of federal projects including activities that are initiated or sponsored by federal departments and agencies, that receive federal funds, or involve federal property. All departments and agencies are subject to the process, except proprietary Crown corporations and regulatory agencies which are invited to participate. Departments and agencies screen proposed projects for potential adverse effects. If effects are not apparent, a more detailed evaluation is made. At either of these stages, the project may be accepted, modified, or rejected. When the potential environmental effects may be significant, the project is referred to the assessment review office for a formal public review by an independent environmental assessment panel.

The panel issues guidelines for an environmental impact statement that is prepared by the project proponent. As part of its review, the panel holds public meetings in communities near the proposed project site to hear comments about the proposal. It submits a report to the minister of the environment which describes the major potential impacts and contains recommendations on project implementation. Decisions on the recommendations are made by the minister of the environment and the minister of the initiating or sponsoring department.

Sources

- 1.1 National Geographical Mapping Division, Surveys and Mapping Branch, Department of Energy, Mines and Resources.
- 1.1.1 Topographical Survey Division, Surveys and Mapping Branch, Department of Energy, Mines and Resources.
- 1.1.2 Information Services Directorate, Department of the Environment.
- 1.1.3 Information Services, Department of Fisheries and Oceans.
- 1.1.4 - 1.1.5 National Geographical Mapping Division, Surveys and Mapping Branch, Department of Energy, Mines and Resources.
- 1.2 Geological Survey of Canada, Department of Energy, Mines and Resources.
- 1.3 Information Services Directorate, Department of the Environment.
- 1.4 Division of Physics, National Research Council.
- 1.5 - 1.5.1 Canada Year Book Section, Information Division, Statistics Canada; Lands Management Division, Northern Water, Lands, Forest and Environment Branch, Department of Indian Affairs and Northern Development; Parks Canada Information Division, Department of the Environment, except Gatineau Park supplied by the National Capital Commission.
- 1.5.2 Supplied by the respective provincial government departments.
- 1.5.3 National Capital Commission.
- 1.6 Information Services Directorate, Department of the Environment, except 1.6.3 Federal Environmental Assessment Review Office.

Tables

...	not available	e	estimate
...	not appropriate or not applicable	p	preliminary
—	nil or zero	r	revised
--	too small to be expressed		certain tables may not add due to rounding

1.1 Approximate land and freshwater areas, by province

Province or territory	Land km ²	Freshwater km ²	Total km ²	Percentage of total area
Newfoundland	370 485	34 032	404 517	4.1
Island of Newfoundland	106 614	5 685	112 299	1.1
Labrador	263 871	28 347	292 218	3.0
Prince Edward Island	5 657	—	5 657	0.1
Nova Scotia	52 841	2 650	55 491	0.6
New Brunswick	72 092	1 344	73 436	0.7
Quebec	1 356 791	183 889	1 540 680	15.5
Ontario	891 194	177 388	1 068 582	10.8
Manitoba	548 495	101 592	650 087	6.5
Saskatchewan	570 269	81 631	651 900	6.6
Alberta	644 389	16 796	661 185	6.6
British Columbia	930 528	18 068	948 596	9.5
Yukon	478 034 ¹	4 481	482 515 ¹	4.9
Northwest Territories	3 246 390	133 294	3 379 684	34.1
Franklin	1 403 134	19 425	1 422 559	14.3
Keewatin	565 809	25 123	590 932	6.0
Mackenzie	1 277 447	88 746	1 366 193	13.8
Canada	9 167 165 ¹	755 165	9 922 330 ¹	100.0

¹Recalculated figures 1977.

1.2 Principal heights in each province

Province and height	Elevation m	Province and height	Elevation m
NEWFOUNDLAND		QUEBEC (concluded)	
Long Range Mountains		Albert Nord Summit	1 083
Lewis Hills	814	Matawees Mountain	1 074
Gros Morne	806	Rond Summit (Sutton Mountains)	968
Table Mountain (St. Barbe District)	724	Mount Bayfield	892
Mount St. Gregory	686	Mount Orford	876
Gros Paté	656	Hereford Mountain	846
Blue Mountain	649	Barn Mountain	846
Blue Hills of Couteau		Le Pinacle Mountain	709
Peter Snout	495	The Laurentians	
Central Highlands		Mont-Tremblant	968
Main Topsail	555	Mont Sainte-Anne	800
Mizzen Topsail	537	Mont Sir Wilfrid	783
Tornгат Mountains		Monteregian Hills	
Unnamed peak (58°53' 63°43')	1 652	Brome Mountain	533
Cirque Mountain	1 568	Shefford Mountain	518
Mount Cladonia	1 453	Mont Saint-Hilaire	411
Mount Eliot	1 388	Yamaska Mountain	411
Mount Terragona	1 356	Rougemont	396
Quartzite Mountain	1 186		
Blow-Me-Down Mountain	1 183	ONTARIO	
Kaumajet Mountains		Highest point, Timiskaming District	
Bishops Mitre	1 113	(47°20' 80°44')	693
Finger Hill	1 033	Ogidaki Mountain	665
PRINCE EDWARD ISLAND		Batchawana Mountain	653
Highest point on the Island, Queens		Tip Top Mountain	640
County (46°20' 63°27')	142	Niagara Escarpment	
NOVA SCOTIA		Blue Mountains	541
Highest point, Cape Breton (46°42' 60°36')	532	Osler Bluff	526
Franeý Mountain	428	Caledon Mountain	427
Nutty Mountain (Cobequid)	367	High Hill	354
Dalhouse Mountain (Cobequid)	340	Mount Nemo	305
NEW BRUNSWICK		MANITOBA	
Mount Carleton	820	Baldy Mountain	832
Moose Mountain	404	Porcupine Hills	823
		Riding Mountain	610
QUEBEC		SASKATCHEWAN	
Mont D'Iberville (Tornгат Mountains)	1 652	Cypress Hills	1 392
Appalachian Mountains		Wood Mountain	1 013
Mont Jacques-Cartier (Shickshock		Vermilion Hills	785
Mountains)	1 268	ALBERTA	
Mount Richardson	1 185	Mount Columbia	3 747
Mount Albert District		The Twins	3 734
Albert Sud Summit	1 151	Mount Alberta	3 619
Mount Logan	1 135	Mount Assiniboine	3 618
Mont Mégantic	1 105	Mount Forbes	3 612

1.2 Principal heights in each province (concluded)

Province and height	Elevation m	Province and height	Elevation m
ALBERTA (concluded)		BRITISH COLUMBIA (concluded)	
Mount Temple	3 544	Mount Ball	3 312
Mount Lyell	3 520	Bush Mountain	3 307
Mount Hungabee	3 520	Mount Geikie	3 305
Snow Dome	3 520	Mount Sir Alexander	3 274
Mount Kitchener	3 505	Fresnoy Mountain	3 271
Mount Athabasca	3 491	Mount Gordon	3 216
Mount King Edward	3 475	Mount Stephen	3 199
Mount Brazeau	3 470	Cathedral Mountain	3 189
Mount Victoria	3 464	Odaray Mountain	3 155
Stutfield Peak	3 450	The President	3 139
Mount Joffre	3 449	Mount Laussedat	3 059
Deltaform Mountain	3 424		
Mount Lefroy	3 423	YUKON	
Mount Alexandra	3 418	St. Elias Mountains	
Mount Sir Douglas	3 406	Mount Logan	5 951
Mount Woolley	3 405	Mount St. Elias	5 489
Lunette Peak	3 399	Mount Lucania	5 226
Mount Hector	3 398	King Peak	5 173
Diadem Peak	3 371	Mount Steele	5 073
Mount Edith Cavell	3 363	Mount Wood	4 842
Mount Fryatt	3 361	Mount Vancouver	4 785
Mount Chown	3 331	Mount Hubbard	4 577
Mount Wilson	3 261	Mount Walsh	4 505
Clearwater Mountain	3 176	Mount Alverstone	4 439
Mount Coleman	3 135	McArthur Peak	4 344
Eiffel Peak	3 079	Mount Augusta	4 289
Pinnacle Mountain	3 067	Mount Kennedy	4 238
		Mount Strickland	4 212
BRITISH COLUMBIA		Mount Newton	4 210
Vancouver Island Ranges		Mount Cook	4 194
Golden Hinde	2 200	Mount Craig	4 039
Mount Albert Edward	2 081	Mount Malaspina	3 886
Mount Arrowsmith	1 817	Mount Badham	3 848
Coast Mountains		Mount Seattle	3 073
Mount Waddington	3 994		
St. Elias Mountains		NORTHWEST TERRITORIES	
Fairweather Mountain	4 663	Arctic Islands	
Mount Root	3 920	Baffin	
Monashee Mountains		Penny Ice Cap	2 057
Mount Begbie	2 732	Mount Thule	1 711
Storm Hill	1 615	Cockscomb Mountain	1 625
Selkirk Mountains		Barnes Ice Cap	1 123
Mount Sir Sandford	3 522	Knife Edge Mountain	760
Mount Dawson	3 390	Banks	
Adamant Mountain	3 356	Durham Heights	732
Grand Mountain	3 305	Devon	
Iconoclast Mountain	3 251	Ice Cap	1 920
Rogers Peak	3 214	Ellesmere	
Purcell Mountains		Barbeau Peak, highest point in	
Mount Farnham	3 457	Arctic Islands	2 616
Mount Karnak	3 383	Commonwealth Mountain	2 210
Columbia (Cariboo) Mountains		Mount Jeffers	1 905
Sir Wilfrid Laurier	3 444	Mount Wood	1 448
Rocky Mountains		Mount Cheops	1 448
Mount Robson	3 954	Victoria	
Mount Clemenceau	3 658	Shaler Mountains	655
Mount Goodsir	3 581	Mount Bumpus	503
Mount Bryce	3 507	Mainland	
The Helmet	3 429	Mount Sir James MacBrien	2 762
Resplendent Mountain	3 426	Franklin Mountains	
Mount King George	3 422	Cap Mountain	1 577
Whitehorn Mountain	3 395	Mount Clark	1 462
Mount Huber	3 368	Pointed Mountain	1 405
Mount Freshfield	3 336	Nahanni Butte	1 396
Mount Mummery	3 328	Richardson Mountains	
Mount Vaux	3 320	Mount Goodenough	981

1.3 Elevations, areas and depths of the Great Lakes

Lake	Elevation ¹ <i>m</i>	Length <i>km</i>	Breadth <i>km</i>	Maximum depth <i>m</i>	Total area <i>km</i> ²	Area on Canadian side of boundary <i>km</i> ²
Superior	183	563	257	405	82 103	28 749
Michigan	176	494	190	281	57 757	—
Huron	176	332	295	229	59 570	36 001
St. Clair	175	42	39	6	1 114	694
Erie	174	388	92	64	25 667	12 769
Ontario	75	311	85	244	19 011	10 049

¹Long-term mean, 1860-1972; International Great Lakes Datum, 1955.

1.4 Elevations and areas of principal lakes¹ (exceeding 388 km²), by province

Province and lake	Elevation <i>m</i>	Area <i>km²</i>	Province and lake	Elevation <i>m</i>	Area <i>km²</i>
NEWFOUNDLAND AND LABRADOR			SASKATCHEWAN (concluded)		
Ashuanipi	529	598	Montreal	490	456
Atikoniak	518	433	Peter Pond	421	777
Grand	87	539	Pinehouse	385	404
Joseph	518	451	Primrose	599	448
Melville	tidal	3 069	Reindeer ²	337	6 651
Michikamau	460	2 031	Scott	444	394
Lostick	457	510	Tazin	344	391
Ossokmanuan Reservoir	479	834	Wollaston	398	2 681
Smallwood Reservoir	471	6 527 ^r			
NOVA SCOTIA			ALBERTA		
Bras d'Or	tidal	1 098	Bistcho	552	427
			Claire	213	1 437
			Lesser Slave	577	1 168
QUEBEC			BRITISH COLUMBIA		
Albanel	389	445	Atlin ²	668	774
Bienville	427	1 248	Babine	711	495
Cabonga Reservoir	361	679	Kootenay	532	407
Dozois Reservoir	346	404	Ootsa	853	404
Eau Claire	241	1 383	Williston	664	1 660 ^r
Evans	241	546			
Gouin Reservoir	404	1 570	YUKON		
Kaniapiskau	564	471	Kluane	781	409
Leaf	tidal	453			
Lower Seal	262	578	NORTHWEST TERRITORIES		
Manicouagan Reservoir	360	1 942	Aberdeen	80	1 101
Manouane	494	585	Amadjuak	113	3 116
Minto	168	761	Angikuni	257	510
Mistassini	372	2 336	Artillery	365	552
Payne	130	534	Aubry	258	391
Pipmuacan	396	979	Aylmer	375	847
Saint-Jean	98	1 002	Baker	2	1 888
Sakami	195	593	Bluenose	557	401
ONTARIO			Buffalo	265	614
Abitibi ²	265	932	Clinton Colden	375	736
Big Trout	213	660	Colville	245	456
Lake of the Woods ² (total			Contwoyto	416	958
4 349) Canadian part 3 149	323	3 149	De Gras	416	632
Nipigon	261	4 848	Des Bois	297	469
Nipissing	196	831	Dubawnt	236	3 833
Rainy (total 932)			Ennadai	311	681
Canadian part 741	338	741	Eskimo North	0.3	839
St. Joseph	371	492	Eskimo South	2	629
Sandy	276	526	Faber	213	440
Seul	357	1 658	Ferguson	11	588
Simcoe	219	743	Garry	148	976
Trout (English River)	394	414	Great Bear	156	31 153 ^r
			Great Slave	156	28 570
MANITOBA			Hall	6	492
Cedar	253	1 352	Hazen	158	541
Cross	207	756	Hottah	180	917
Dauphin	260	521	Kamilukuak	266	635
Gods	178	1 150	Kaminak	53	601
Granville	258	490	Kaminuriak	92	549
Island	227	1 222	Kasba	336	1 342
Manitoba	248	4 659	Keller	247	394
Molson	221	399	La Martre	265	1 777
Moose	255	1 368	Mac Alpine	176	448
Oxford	187	401	Mackay	431	1 062
Playgreen	217	658	Mallery	158	479
Sipiwek	183	456	Nettilling	29	5 543
Southern Indian	255	2 248	Netsilik	8	391
Winnipeg	217	24 390	Nonacho	319	785
Winnipegosis	253	5 374	Nueltin ²	278	2 279
			Point	375	702
SASKATCHEWAN			Princess Mary	116	523
Amisk	294	430	Selwyn ²	398	717
Athabasca ²	213	7 936	Snowbird	359	505
Black	281	464	South Henik	184	513
Churchill	421	559	Takiyuak	381	1 080
Cree	487	1 435	Tathlina	280	572
Deschambault	324	541	Tebesjuak	146	575
Doré	459	642	Tehek	133	482
Frobisher	421	515	Trout	503	505
Île à la Crosse	421	391	Tulemalu	279	668
La Ronge	364	1 414	Wholdaia	364	679
			Yathkyed	141	1 448

Areas given are for mean water levels. All elevations are in metres above mean sea level.

¹Excludes Great Lakes, see Table 1.3.

²Spans provincial or territorial boundary. Listed under province or territory containing larger portion. Area given is total area.

1.5 Lengths of principal rivers and their tributaries

Drainage basin and river	Length km	Drainage basin and river	Length km
FLOWING INTO THE PACIFIC OCEAN		FLOWING INTO HUDSON BAY AND HUDSON STRAIT (concluded)	
Yukon (mouth to head of Nisutlin)	3 185	Koksoak (to head of Caniapiscaw)	874
(International Boundary to head of Nisutlin)	1 149	Nottaway (via Bell to head of Mégiscane)	776
Porcupine	721	Rupert (to head of Témiscamie)	763
Stewart	644	Eastmain	756
Pelly	608	Attawapiskat (to head of Bow Lake)	748
Teslin	393	Kazan (to head of Ennadai Lake)	732
Columbia (mouth to head of Columbia Lake)	2 000	Grande rivière de la Baleine (Great Whale)	724
(International Boundary to head of Columbia Lake)	801	George	563
Kootenay	781	Moose (to head of Mattagami)	541
Elk (to head of Elk Lake)	220	Abitibi (to head of Louis Lake)	541
St. Mary	117	Mattagami (to head of Minisnakwa Lake)	443
Slocan (to head of Slocan Lake)	97	Missinaibi	426
Kettle (to head of Holmes Lake)	336	Harricana	533
Okanagan (to head of Okanagan Lake)	314	Hayes	483
Similkameen	251	Aux Feuilles (Leaf)	480
Canoe	169	Winisk	475
Spillimacheen	84	Broadback	451
Kicking Horse (to head of Wapta Lake)	84	A la Baleine (Whale)	428
Illecillewaet	77	de Povungnituk	389
Fraser	1 368	Innuisuc	385
Thompson (to head of North Thompson)	489	Petite rivière de la Baleine (Little Whale River)	380
North Thompson	338	Arnaud	377
South Thompson (to head of Shuswap)	332	Nastapoca	360
Shuswap	185	Kogaluc	304
Nechako (to head of Eutsuk Lake)	462	FLOWING INTO THE ATLANTIC OCEAN	
Stuart (to head of Driftwood)	415	St. Lawrence River	3 058
Chilcotin	235	Lake Superior	
West Road	227	Nipigon (to head of Ombabika)	209
Quesnel (to head of Mitchell Lake)	203	Magpie (to head of Mereke Lake)	114
Lilloet	177	Lake Huron	
Bridge	142	Spanish	338
Skeena	579	French (to head of Sturgeon)	290
Bulkley (to head of Maxam Creek)	257	Mississagi	266
Stikine	539	Saugeen	161
Nass	380	Lake St. Clair	
Homathko	137	Thames	262
FLOWING INTO THE ARCTIC OCEAN		Lake Erie	
Mackenzie (to head of Finlay)	4 241	Grand	266
Peace (to head of Finlay)	1 923	Lake Ontario	
Smoky	492	Trent (to head of Irondale)	402
Finlay	402	Moir	124
Parsnip	233	Ottawa River	1 271
Athabasca	1 231	Gatineau	386
Pembina	547	du Lièvre	330
Liard	1 115	Madawaska (to head of Madawaska Lake)	230
South Nahanni	563	Coulonge	217
Fort Nelson (to head of Sikanni Chief)	517	Petawawa (to head of Butt Lake)	187
Petitot	404	Rouge	185
Hay	702	Mississippi (to head of Mazinaw Lake)	169
Peel (mouth of west channel to head of Ogilvie)	684	South Nation	161
Arctic Red	499	Rideau	146
Slave (from Peace River to Great Slave Lake)	415	Dumoine	129
Fond du Lac (to outlet of Wollaston Lake)	277	du Nord	113
Back (to outlet of Muskox Lake)	974	de la Petite Nation	97
Coppermine	845	Saguenay (to head of Péribonca)	698
Anderson	692	Péribonca	451
Horton	618	Mistassini	298
FLOWING INTO HUDSON BAY AND HUDSON STRAIT		Ashuapmucuan	266
Nelson (to head of Bow)	2 575	Saint-Maurice	563
(to outlet of Lake Winnipeg)	644	Matawin	161
Saskatchewan (to head of Bow)	1 939	Manicouagan (to head of Mouchalagane)	560
South Saskatchewan (to head of Bow)	1 392	aux Outardes	499
Red Deer	724	Romaine	496
Bow	587	Betsiamites (to head of Kanouanis)	444
Oldman	362	Moisie	410
North Saskatchewan	1 287	Bersimis	386
Battle (to head of Pigeon Lake)	570	St-François	280
Red (to head of Shéyenne)	877	St-Augustin	233
Assiniboine	1 070	Chaudière	193
Winnipeg (to head of Firesteel)	813	Richelieu (to mouth of Lake Champlain)	171
English	615	Churchill (to head of Ashuanipi)	856
Fairford (to head of Manitoba Red Deer)	684	Saint John	673
Churchill (to head of Churchill Lake)	1 609	Tobique (to outlet of Nictau Lake)	148
Beaver (to outlet of Beaver Lake)	491	du Petit-Mécatina	547
Severn (to head of Black Birch)	982	Natashquan	410
Albany (to head of Cat)	982	Exploits	246
Thelon	904	Eagle	233
Dubawnt	842	Miramichi	217
La Grande-Rivière (Fort George River)	893	Gander (to head of Northwest Gander River)	175
		Nepisiguit (to outlet of Nepisiguit Lake)	121
		St. Mary's (to head of North Nelson)	95
		Mersey (to outlet of 11 Mile Lake)	93
		Bay du Nord	66
		Pipers Hole	37

1.6 Areas of major islands, by region

Region and island	Area km ²	Region and island	Area km ²
Baffin Island	507 451	HUDSON BAY AND HUDSON STRAIT	
QUEEN ELIZABETH ISLANDS		Southampton	41 214
Ellesmere	196 236	Coats	5 499
Devon	55 247	Mansef	3 181
Axel Heiberg	43 178	Akimiski	3 002
Melville	42 149	Flaherty	1 585
Bathurst	16 042	Nottingham	1 373
Prince Patrick	15 848	Resolution	1 015
Ellef Ringnes	11 295	Vansittart	997
Cornwallis	6 996	Akpatok	904
Amund Ringnes	5 255	Salisbury	805
Mackenzie King	5 048	Big	803
Borden	2 795	White	790
Cornwall	2 258	Loks Land	420
Eglinton	1 541	PACIFIC COAST	
Graham	1 378	Vancouver	31 284
Lougheed	1 308	Graham	6 361
Byam Martin	1 150	Moresby	2 608
Île Vanier	1 127	Princess Royal	2 251
Cameron	1 059	Pitt	1 375
Meighen	956	Banks	989
Brock	764	King	808
King Christian	645	Porcher	521
North Kent	591	Nootka	510
Emerald	549	Aristazabal	420
Alexander	484	Gilford	383
Massey	433	Hawkesbury	365
Little Cornwallis	412	Hunter	363
ARCTIC ISLANDS SOUTH OF QUEEN ELIZABETH ISLANDS		Calvert	329
Victoria	217 290	Texada	300
Banks	70 028	Swindle	285
Prince of Wales	33 338	McCauley	275
Somerset	24 786	Louise	275
King William	13 111	Quadra	269
Bylot	11 067	ATLANTIC COAST	
Prince Charles	9 521	Newfoundland and Labrador	
Stefansson	4 463	Newfoundland (main island)	108 860
Richards	2 165	South Aulatsvik	456
Air Force	1 720	Killinek	269
Wales	1 137	Fogo	254
Rowley	1 090	Random	249
Russell	940	New World	189
Jens Munk	919	Tunungayualok	186
Langley and Ellice	780	West Okak	179
Bray	689	Paul	179
Foley	637	Gulf of St. Lawrence	
Royal Geographical Society Islands	609	Cape Breton	10 311
Sillem	482	Anticosti	7 941
Matty	477	Prince Edward	5 657
Spicer Islands	458	Madeleine Islands	202
Koch	458	Boularderie	192
Jenny Lind	420	Shippegan	150
Prescott	412	Bay of Fundy	
Crown Prince Frederick	401	Grand Manan	137

1.7 Temperature and precipitation data for typical stations in various districts

District and station	Temperatures (Celsius)						Precipitation		
	Mean Jan.	Mean July	Highest on record	Lowest on record	Av. dates of freezing temperatures (0°C or lower)		Total (all forms) <i>mm</i>	Snowfall <i>cm</i>	Av. num- ber of days (all forms)
					Last in spring	First in autumn			
NEWFOUNDLAND									
Island									
Belle Isle	-9.6	9.4	22.8	-35.0	June 21	Sept. 26	893.1	240.0	149
Gander A	-6.1	16.5	35.6	-31.1	June 4	Oct. 5	1 078.2	354.8	204
St. Andrew's	-3.6	15.0	27.2	-23.9	June 3	Sept. 24	1 112.3	196.3	176
St. John's A	-3.8	15.3	30.6	-23.3	June 3	Oct. 12	1 511.5	363.7	210
Labrador									
Cartwright	-13.1	12.9	36.1	-37.8	June 20	Sept. 9	946.4	433.8	179
Goose A	-16.3	15.8	37.8	-39.4	June 6	Sept. 17	876.8	409.2	176

1.7 Temperature and precipitation data for typical stations in various districts (continued)

District and station	Temperatures (Celsius)						Precipitation			
	Mean Jan.	Mean July	Highest on record	Lowest on record	Av. dates of freezing temperatures (0°C or lower)		Total (all forms) mm	Snowfall cm	Av. number of days (all forms)	
					Last in spring	First in autumn				
MARITIME PROVINCES										
Prince Edward Island										
Charlottetown A	-6.7	18.4	34.4	-27.8	May 17	Oct. 15	1 127.8	305.1		169
Nova Scotia										
Annapolis Royal	-3.9	18.3	32.8	-27.2	May 19	Oct. 2	1 204.5	218.2		149
Halifax	-3.2	18.3	34.4	-25.0	May 1	Nov. 1	1 318.8	210.8		152
Sydney A	-4.4	17.9	35.0	-25.6	May 23	Oct. 16	1 340.9	288.0		179
Yarmouth A	-2.7	16.4	30.0	-21.0	May 2	Oct. 24	1 283.2	204.5		157
New Brunswick										
Chatham A	-9.3	19.2	37.8	-35.0	May 22	Sept. 21	1 051.2	309.4		152
Grand Falls	-11.9	18.3	36.7	-43.3	May 24	Sept. 21	1 021.6	265.2		105
Moncton A	-7.9	18.6	37.2	-32.2	May 23	Sept. 23	1 099.3	313.7		156
Saint John A	-7.1	17.1	34.4	-36.7	May 18	Oct. 2	1 400.3	204.7		149
QUEBEC										
Northern										
Fort Chimo A	-23.4	11.4	32.2	-46.7	June 27	Aug. 30	483.8	236.7		155
Inoucdjouac (Port Harrison)	-24.7	8.9	30.0	-46.1	July 1	Sept. 4	355.6	122.9		133
Nitchequon	-22.9	13.6	32.2	-49.4	June 13	Sept. 13	764.5	284.7		192
Schefferville A	-22.7	12.6	31.7	-50.6	June 18	Aug. 31	722.5	335.5		188
Southern										
Bagotville A	-15.7	17.8	36.1	-43.3	May 26	Sept. 18	936.6	341.6		177
Montreal McGill	-8.9	21.6	36.1	-33.9	Apr. 22	Oct. 23	999.0	243.1		164
Pointe au Père	-10.9	15.4	32.2	-36.1	May 19	Sept. 28	848.6	285.8		135
Quebec A	-11.6	19.2	35.6	-36.1	May 18	Sept. 28	1 088.6	326.6		164
Sept-Iles A	-13.9	15.1	32.2	-43.3	May 30	Sept. 17	1 090.3	423.2		146
Sherbrooke	-9.6	20.1	36.7	-41.1	May 12	Sept. 27	972.6	244.6		170
ONTARIO										
Northern										
Kapuskasing A	-18.2	17.0	36.7	-44.4	June 13	Sept. 5	871.5	321.8		186
Sioux Lookout A	-18.7	18.4	36.1	-46.1	May 29	Sept. 20	741.5	236.7		165
Thunder Bay A	-14.8	17.5	37.2	-41.1	May 31	Sept. 10	738.5	222.0		141
Trout Lake	-24.1	15.9	35.6	-47.8	June 11	Sept. 16	597.3	212.3		158
Southern										
London A	-6.0	20.5	36.7	-31.7	May 9	Oct. 6	924.5	201.2		165
Ottawa A	-10.9	20.7	37.8	-36.1	May 11	Oct. 1	850.9	215.6		152
Parry Sound	-9.5	19.3	37.8	-41.1	May 14	Oct. 2	1 020.1	296.7		158
Toronto	-4.4	21.8	40.6	-32.8	Apr. 20	Oct. 30	789.9	141.0		134
Windsor A	-4.3	22.3	38.3	-26.1	Apr. 29	Oct. 20	836.1	103.6		137
PRAIRIE PROVINCES										
Manitoba										
Churchill A	-27.6	12.0	33.9	-45.0	June 22	Sept. 12	396.6	183.9		141
The Pas A	-22.4	17.9	36.7	-49.4	May 28	Sept. 20	449.7	157.2		128
Winnipeg A	-18.3	19.7	40.6	-45.0	May 25	Sept. 21	535.2	131.3		121
Saskatchewan										
Regina A	-17.3	18.9	43.3	-50.0	May 27	Sept. 12	397.9	114.8		114
Saskatoon A	-18.7	18.8	40.0	-47.8	May 27	Sept. 15	352.6	112.5		103
Swift Current A	-13.9	18.7	38.9	-42.8	May 28	Sept. 19	389.9	123.7		112
Alberta										
Beaverlodge Ag Can	-14.9	15.6	36.7	-47.8	May 22	Sept. 7	454.7	183.6		129
Calgary A	-10.9	16.5	36.1	-45.0	May 28	Sept. 12	437.1	153.9		113
Edmonton Ind. A	-14.7	17.5	34.4	-48.3	May 14	Sept. 19	446.5	132.1		121
Medicine Hat A	-12.1	20.2	42.2	-46.1	May 17	Sept. 20	347.8	121.7		89
BRITISH COLUMBIA										
Pacific Coast and Coastal Valleys										
Estevan Point	4.5	13.8	28.9	-13.9	Apr. 5	Nov. 18	3 027.9	34.3		203
Langara	2.5	12.4	25.6	-14.4	Apr. 3	Nov. 26	1 675.6	61.2		248
Prince Rupert	1.8	13.6	32.2	-21.1	Apr. 19	Nov. 5	2 414.5	113.0		227
Vancouver A	2.4	17.4	33.3	-17.8	Mar. 31	Oct. 30	1 068.1	52.3		161
Victoria										
Gonzale Hts	4.1	15.7	35.0	-15.6	Feb. 28	Dec. 9	657.1	32.8		142
Southern Interior										
Glacier	-11.3	14.4	36.7	-35.6	June 12	Sept. 6	1 492.8	969.5		192
Kamloops A	-6.0	20.9	40.6	-37.2	May 5	Sept. 28	260.6	77.0		90
Penticton A	-2.9	20.1	40.6	-27.2	May 10	Oct. 1	296.2	69.1		100
Princeton A	-8.1	17.6	41.7	-42.8	June 3	Sept. 12	359.1	157.0		115
Central Interior										
Barkerville	-9.8	12.3	35.6	-46.7	June 29	Aug. 18	1 148.8	581.4		185
McBride	-9.1	15.9	37.8	-46.7	June 9	Sept. 1	524.5	197.4		128
Prince George A	-11.8	14.9	34.4	-50.0	June 10	Aug. 28	620.7	233.4		162
Smithers A	-10.6	14.6	34.4	-43.9	June 10	Sept. 1	512.2	197.4		158
Northern Interior										
Atlin	-16.6	12.6	30.6	-50.0	June 5	Aug. 28	283.2	121.4		86
Dease Lake	-19.3	12.6	33.9	-51.1	June 29	Aug. 13	394.5	186.7		143
Fort Nelson A	-23.2	16.7	36.7	-51.7	May 24	Sept. 5	446.4	191.5		130
Fort St. John A	-17.2	15.9	33.3	-47.2	May 20	Sept. 9	449.8	206.2		128
Smith River A	-24.5	14.1	33.3	-58.9	June 21	Aug. 11	465.3	211.6		148

1.7 Temperature and precipitation data for typical stations in various districts (concluded)

District and station	Temperatures (Celsius)				Av. dates of freezing temperatures (0°C or lower)		Precipitation		
	Mean Jan.	Mean July	Highest on record	Lowest on record			Total (all forms) mm	Snowfall cm	Av. number of days (all forms)
					Last in spring	First in autumn			
YUKON									
Dawson	-28.6	15.5	35.0	-58.3	May 26	Aug. 27	325.5	136.4	120
Snag A	-28.2	13.9	31.7	-62.8	June 18	Aug. 9	359.7	140.5	118
Watson Lake A	-25.3	14.9	33.9	-58.9	May 30	Sept. 3	432.3	227.3	153
Whitehorse A	-18.9	14.1	34.4	-52.2	June 5	Sept. 1	260.3	127.8	118
NORTHWEST TERRITORIES									
Mackenzie Basin									
Fort Good Hope	-31.0	15.9	34.4	-55.6	June 3	Aug. 19	283.7	124.0	101
Fort Simpson A	-27.6	16.1	35.0	-53.3	May 31	Aug. 29	343.2	137.9	126
Hay River A	-25.5	15.6	35.6	-48.3	June 6	Sept. 11	339.8	165.1	109
Barrens									
Baker Lake	-33.6	10.7	30.6	-50.6	June 25	Aug. 31	213.0	88.9	96
Chesterfield	-31.8	8.7	30.6	-51.1	June 29	Sept. 6	263.5	112.8	98
Coppermine	-29.4	9.3	32.2	-50.0	June 27	Aug. 21	216.3	101.9	110
Arctic Archipelago									
Clyde	-26.9	4.6	22.2	-45.6	July 13	July 18	206.3	152.9	94
Eureka	-36.6	5.5	19.4	-53.9	June 27	Aug. 5	58.4	38.4	52
Frrobisher Bay A	-26.2	7.9	24.4	-45.6	June 30	Aug. 29	415.2	246.9	135
Mould Bay	-33.8	3.7	16.1	-53.9	July 12	July 19	86.4	59.9	73
Resolute A	-32.6	4.3	18.3	-52.2	July 10	July 20	136.4	78.7	94

A = Airport, Ind. A = Industrial Airport.

Ag Can = Agriculture Canada.

1.8 Total area classified by tenure, 1978 (km²)

Item	Province or territory						
	Nfld.	PEI	NS	NB	Que.	Ont.	Man.
Federal Crown lands other than national parks, Indian reserves and forest experiment stations	440	16	181	1 489	1 178 ¹	1 158	259
National parks	2 339	21	1 331	433	790 ²	1 922	2 978
Indian reserves	—	8	114	168	779 ³	6 703	2 145
Federal forest experiment stations	—	—	—	91	28	103	—
Privately owned land or land in process of alienation from the Crown	17 992	4 927	37 354	39 754	119 420	119 023	138 079
Provincial or territorial area other than provincial parks and provincial forests ⁴	382 638	442	2 652	28 495	674 819	891 261	481 951
Provincial parks	805	32	126	215	130 000	48 412	10 650
Provincial forests	303	211	13 732	2 792	613 667	—	14 025
Total area	404 517	5 657	55 490	73 437	1 540 680	1 068 582	650 087
	Sask.	Alta.	BC	YT	NWT	Canada	
Federal Crown lands other than national parks, Indian reserves and forest experiment stations	5 452	2 844 ⁵	904	513 191	3 340 848	3 867 960	
National parks	3 875	54 084	4 690	22 015	35 690	130 168	
Indian reserves	6 322	6 566	3 390	5	135	26 335	
Federal forest experiment stations	—	59	—	—	—	281	
Privately owned land or land in process of alienation from the Crown	246 939	183 521	55 040	170	73	962 292	
Provincial or territorial area other than provincial parks and provincial forests ⁴	35 481	63 313 ⁶	539 280	943	2 937	3 104 212	
Provincial parks	4 944	7 700	41 629	—	—	244 513	
Provincial forests	348 887	343 098 ⁷	303 663	—	—	1 640 378	
Total area	651 900	661 185	948 596	536 324	3 379 683	9 976 138	

¹Includes Gatineau Park (351.1 km²) and Quebec Battlefields Park (0.93 km²) both under federal jurisdiction but not national parks. Excludes harbours of Gaspé, Chicoutimi, Quebec and l'Islet, Trois Rivières, Montreal and Sorel (under federal-provincial negotiation), and CNR properties.²Includes Forillon and Mauricie parks.³Includes reserves existing before 1851: Maria, Lorette, Bécancour, Odanak, Caughnawaga and Saint-Régis. Excludes lands transferred provisionally under the James Bay and Northern Quebec Agreement (November 1975) and North-Eastern Quebec Agreement (January 1978).⁴Includes freshwater area.⁵Excludes Department of National Defence agreement areas (Primrose Lake, Camp Wainwright) and areas leased for agricultural experiment stations (Manyberries, Stavelly).⁶Includes lands held by the Department of National Defence under agreement with Alberta (Camp Wainwright) and areas leased for agricultural experiment stations (Manyberries, Stavelly).⁷Includes the area held by the Department of National Defence under agreement with Alberta (Primrose Lake Air Weapons Range).

1.9 National parks by name and year established

National park	Year established	Location	Area <i>km²</i>	Description
Banff	1885	Western Alberta, on east slope of Rocky Mountains	6 640.8	Scenic mountain area; Banff and Lake Louise resorts. Mineral hot springs. Summer and winter sports. Hotels and cabins. Campgrounds.
Yoho	1886	Eastern British Columbia, on west slope of Rockies	1 313.1	Mountain peaks, waterfalls and lakes. Yoho and Kicking Horse Valleys. Hotels, lodges. Campgrounds.
Glacier	1886	Southeast British Columbia in the Selkirk Mountains	1 349.4	Alpine region, towering peaks, glaciers and forests. Climbing, skiing, camping.
Waterton Lakes	1895	Southern Alberta, adjoining Glacier Park in Montana	525.8	Mountainous area with peaks and lakes. Hotels and cabins. Campgrounds.
Jasper	1907	Western Alberta, on east slope of Rockies	10 878.0	Mountain area. Wildlife sanctuary. Ice fields, lakes. Jasper Resort. Mineral hot springs. Summer and winter sports. Hotels and cabins. Campgrounds.
Elk Island	1913	Central Alberta	194.3	Fenced preserve with large herd of buffalo, deer, elk and moose. Summer recreation. Cabins. Campgrounds.
Mount Revelstoke	1914	Southeast British Columbia, on west slope of Selkirks	262.6	Mountain-top plateau, alpine meadows and mountain lakes. Championship ski runs and ski jump. No campsites.
St. Lawrence Islands	1914	St. Lawrence River between Brockville and Kingston, Ont.	4.1	Mainland area and 17 islands among the Thousand Islands. Accessible by boat from mainland points. Campgrounds.
Point Pelee	1918	On Lake Erie, south-western Ontario	15.5	Wildlife sanctuary. Beaches, marsh area, southern flora, nature trail. Staging ground for migratory birds. Campgrounds.
Kootenay	1920	Southeast British Columbia, on west slope of Rockies	1 377.9	Includes section of Banff-Windermere Highway. Broad valleys, deep canyons, mineral hot springs. Hotels and cabins. Campgrounds.
Wood Buffalo	1922	Alberta and Northwest Territories, between Athabasca and Slave rivers	44 807.0	Forests and open plains. Mainly a wildlife sanctuary. Largest herds of plains bison and wood bison in North America. Accessible from Fort Smith, NWT.
Prince Albert	1927	Central Saskatchewan	3 874.6	Forest region. Lakes and streams. Summer recreation. Hotels and cabins. Campgrounds.
Riding Mountain	1929	Southwest Manitoba	2 975.9	Wildlife sanctuary on escarpment. Lakes. Hotels and cabins. Campgrounds. Summer recreation. Winter skiing.
Georgian Bay Islands	1929	In Georgian Bay, near Honey Harbour, Ont.	14.2	Accessible by boat. Unusual geological formations on Flowerpot Island. Campgrounds on Beausoleil Island. Picnic areas.
Cape Breton Highlands	1936	Northern Cape Breton Islands, NS	950.5	Rugged Atlantic coastline. Fine seascapes. Hotels and cabins. Campgrounds.
Prince Edward Island	1937	North shore, Prince Edward Island	18.1	Recreational area, bathing beaches. Motels and cabins. Campgrounds.
Fundy	1948	On Bay of Fundy in New Brunswick	205.9	Forested region, wildlife, sanctuary, rugged terrain. Cabins. Campgrounds. Summer recreation.
Terra Nova	1957	On Bonavista Bay, Nfld., North of St. John's	396.5	Maritime area, rocky headlands and forests. Sport fishing. Cabins. Campgrounds.
Kejimikujik	1968	South-central Nova Scotia	381.5	Inland park. Lakes and rivers. Hiking, canoeing, campgrounds, swimming, interpretation program, picnic areas. Historic Micmac Indian petroglyphs.
Kouchibouguac	1969	On northern Northumberland Strait in New Brunswick	225.3	Maritime park with off-shore sandbars. Boating. Fishing in streams, rivers, lakes and ocean. Campgrounds.

1.9 National parks by name and year established (concluded)

National park	Year established	Location	Area <i>km²</i>	Description
Pacific Rim	1970	West coast of Vancouver Island, BC	388.5	Sandy beaches, islands, rain forests, lakes and a lifesaving trail. Swimming, fishing and surfing. Campgrounds.
Forillon	1970	Gaspé Peninsula, Que.	240.4	Coastal area with rugged cliffs. Rolling, forested inland areas. Campgrounds.
La Mauricie	1970	Central Quebec near Trois-Rivières	543.9	Heavily-wooded section of Laurentian Mountains. Many lakes. Fishing. Campgrounds.
Gros Morne	1970	West coast of Newfoundland	1 942.5	Rugged coastal area. Fjord-like lakes, forests, waterfalls. Fishing. Campgrounds.
Pukaskwa	1971	North shore of Lake Superior near Marathon, Ont.	1 877.8	Part of the Precambrian Shield. Wilderness area, rugged lake shore. Rivers, streams and lakes.
Kluane	1972	West of Whitehorse, Yukon	22 015.0	Glaciers and mountains. Mount Logan, Canada's highest peak. Fishing in lakes.
Nahanni	1972	Northwest Territories	4 765.0	Accessible by boat or charter aircraft. Hot springs, canyons, waterfalls, wilderness. World heritage site.
Auyuittuq	1972	Baffin Island	21 471.0	Fjords, mountains, glaciers. Winter and summer activities.

1.10 Provincial parks, by province¹, 1978

Province	Total area km ²	Developed area km ²	Parks No.	Type of park	Accommodation and facilities	Activities	Visitors	Rates
Newfoundland and Labrador	1 109.14	277.3	81	Wilderness area Public beaches Seabird sanctuaries Camping Day use Natural scenic attractions	Overnight camping — picnic tables — fireplaces — firewood — potable water — pit privies Day-use — picnic tables — fireplaces — beach — boat launch — change houses Picnic sites Sandy beaches Campgrounds — fresh spring water Serviced tent and trailer sites	Angling Swimming Hiking Canoeing and boating Photography Interpretive programs Snowshoeing Skiing Camping	2.8-3.0 million	\$3.00 for seasonal park entry permit. \$1.00 daily fee. \$2.50 a night for camping permit. Free entry and free camping permits to people 65 and over, but they must check in at entrance stations and supply proof of age.
Prince Edward Island	31.3	16.3	40	Nature preserves Natural environment Recreation Campgrounds Beach access Historic		Museum Swimming Golf Tennis Interpretive programs Camping Skiing	1.0 million	\$6.00 for serviced campsites, \$4.50 for unserviced. No charge for day use.
Nova Scotia	129.7	53.0	100	Campgrounds Picnic Beach Roadside rest sites	Day-use picnic parks Roadside rest sites Day-use beach parks Overnight campgrounds — tables — water — pit privies	Swimming Picnicking Camping	152 424 (campers)	\$4.00 a night for camping permit. No charge for day use.
New Brunswick	223.7	31.3	62	Recreation Rest areas Campgrounds Beach Marine resource Wildlife	Lodge Marinas Campgrounds — tables — some form of toilet facility — potable water	Swimming Boating Camping Golfing Interpretive programs with naturalists Tennis Snowshoeing Skiing — cross-country — downhill Skiing Tobogganing Sleigh rides	3.1 million	\$4.50 to \$5.50 daily camping fee.
Quebec	111 370	..	88	Parks Tourist facilities Wilderness preserves	Cabins Lodges Inns Campgrounds Mooring facilities	Hunting Fishing Hiking Swimming Canoeing Snowshoeing	7.1 million	

1.10 Provincial parks, by province¹, 1978 (continued)

Province	Total area km ²	Developed area km ²	Parks No.	Type of park	Accommodation and facilities	Activities	Visitors	Rates
Quebec (concluded)								
Ontario	50 069	42 448	128	Hunting and fishing preserves Salmon streams Campgrounds Nautical parks		<p>Skiing — cross-country — downhill Camping Mountain climbing Golf Interpretive programs Snowmobiling Picnicking Museums Outdoor exhibits Nature trails Swimming Canoeing Boating Fishing Hiking Snowmobiling Skiing — cross-country</p> <p>Picnic and camping areas — beaches — picnic tables — fireplaces — firewood — electricity — tested drinking water — washrooms/comfort stations — trailer sanitation stations</p>	11.0 million	<p>Effective April 1, 1978, \$2.00 a day or \$20.00 a year for vehicles. For camping, includ- ing vehicle, \$5.00 a night, \$5.50 with comfort station, \$7.00 with electri- city. 1978 — Canadian senior citizens free entry for day use and camping. 1979 — Ontario senior citizens allowed free entry only for day use and camping. Effective May 11, 1979, vehicle entrance fees \$1.50 daily, \$8.00 for the season. Camping fees, \$4.00 a day — unserviced sites, \$5.00 a day — electrical sites, \$6.00 a day — fully serviced sites. \$8.00 for a seasonal park entry permit. \$2.00 daily entry permit, \$4.00 a day for serviced camp- sites, \$2.00 for unserviced.</p>
Manitoba	10 230.5	..	163	Wilderness area Recreation Wayside Heritage Marine Natural Historic sites	<p>Motels Hotels Cabins Fishing lodges Campgrounds Space available for building summer homes</p>	<p>Swimming Camping Hunting Fishing Hiking Canoeing Boating Picnicking Snowmobiling</p>	5.0 million	
Saskatchewan	5 070	..	125	Provincial — wilderness — natural environment — recreation — historic Regional	<p>Campgrounds — picnic and playground areas — electricity — wood — potable water — washrooms</p>	<p>Skiing Camping Picnicking Swimming Historic interest sites Snowmobiling</p>	4.5 million	

1.10 Provincial parks, by province¹, 1978 (concluded)

Province	Total area km ²	Developed area km ²	Parks No.	Type of park	Accommodation and facilities	Activities	Visitors	Rates
Saskatchewan (concluded)					— sewage pumpouts — boat and canoe rentals Modern cabins Chalet	Nature trails Arts and crafts Social functions Hunting, fishing, boating and sailing Snorkelling Auto touring Horseback riding Tennis Golf Cycling Hiking trails Recreation and waterfront programs Camping Picnicking Fishing Hiking Swimming Boating Interpretive programs Skiing — cross-country Boating Camping Picnicking Nature houses ² Interpretive programs with naturalists Winter sports Skiing Canoeing Mountain climbing Swimming Hiking	5.0 million	Free entry for any vehicle transport- ing a senior citizen.
Alberta	2 912 ²	1 088 ³	54	Wilderness area Recreation Preservation Natural environment Wildland	Campgrounds Playgrounds Picnic areas Beaches Trails			\$1.50 per night for camping plus \$0.25 each additional service.
British Columbia	44 817.5	...	347	Wilderness area Recreation Natural Marine Historic Restored gold town	Campgrounds Picnic areas Mooring facilities Hiking trails Nature trails Boat ramps Recreation vehicle sanitary-stations		11.0 million	\$2.00 to \$4.00 daily camping fee. No charge for day use. Some free camping.

¹Applies to 1978, except for 1979 rates quoted.

²Total area equals provincial parks plus 3 wilderness areas (Ghost River, Whitegoat and Siffleur). Does not include Willmore Wilderness

³Area and 6 natural areas (4 621 km²).

⁴Developed area equals total area of operating provincial parks.

⁵A building in the park for discussions, lectures and the showing of films on the natural history of the park.

Sources

- 1.1, 1.6 National Geographical Mapping Division, Surveys and Mapping Branch, Department of Energy, Mines and Resources.
- 1.2, 1.4 Topographical Survey Division, Surveys and Mapping Branch, Department of Energy, Mines and Resources.
- 1.3, 1.5, 1.7 Information Services Directorate, Department of the Environment.
- 1.8, 1.10 Respective provincial government departments.
- 1.9 Parks Canada, Department of the Environment.

Constitution and legal system

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The constitution

2.1

The Canadian federal state of 10 provinces and two territories had its foundation in an act of the British Parliament, the British North America Act, 1867, fashioned for the most part from Seventy-two Resolutions drafted by the Fathers of Confederation at Quebec in 1864. The BNA Act provided for the federal union of three British North American provinces — Canada (Ontario and Quebec), Nova Scotia and New Brunswick — into one dominion under the name Canada. The act made provision for possible future entry into Confederation of the colonies or provinces of Newfoundland, Prince Edward Island and British Columbia, and of Rupert's Land and the North-Western Territory, a vast expanse then held by the Hudson's Bay Company. In 1870, the company surrendered its territories to the British Crown which transferred them to Canada. In exchange it received a cash payment from the Canadian government of £300,000, one-twentieth of the lands in the southern part, "the fertile belt", of the territory, and designated blocks of land around its trading posts. From this new territory was carved Manitoba in 1870, much smaller at its inception than now, and later, in 1905, Saskatchewan and Alberta. British Columbia entered Confederation in 1871 on condition that a railway linking it with Eastern Canada be commenced within two years. It was not until 1873 that Prince Edward Island entered the union, and much later, 1949, that Newfoundland joined (see Table 2.1).

Although the BNA Act of 1867 and its amendments contain a substantial portion of Canada's constitution, it is not a comprehensive constitutional document. There are unwritten and equally important parts such as common law, convention and usage transplanted from Britain over 200 years ago and basic to the Canadian style of democratic government. Among these are the principles of the cabinet system of responsible government with close relationship between executive and legislative branches.

The constitution, in its broadest sense, also includes other Imperial statutes (Statute of Westminster, 1931) and Imperial orders-in-council admitting various provinces and territories to the federation; statutes of the Parliament of Canada pertaining to such matters as succession to the throne, the royal style and title, the Governor General, the Senate, the House of Commons, the creation of courts, the franchise and elections, as well as judicial decisions that interpret the BNA Act and other statutes of a constitutional nature. The constitutions of the provinces of Canada form part of the overall Canadian constitution, and provincial acts which are of a fundamental constitutional nature similar to those listed above are also part of the constitution. The same can be said of both federal and provincial orders-in-council that are of a similar fundamental nature.

Although the essential principles of cabinet government are based on custom or usage, the federal structure of Canadian government rests on written provisions of the BNA Act. A dominant feature of the act was the distribution of powers between the central or federal government and the component provincial governments, granting to the Parliament of Canada legislative jurisdiction over all subjects of general or common interest while giving provincial legislatures jurisdiction over all matters of local or particular interest.

Unlike the written constitutions of many nations, the BNA Act lacks comprehensive "bill of rights" clauses, although it does accord specific although limited constitutional protection to the use of the English and French languages and special safeguards for sectarian or denominational schools. Freedom of speech, freedom of assembly, freedom of religion, freedom of the press, trial by jury and similar liberties enjoyed by the individual citizen were not recorded in the BNA Act but rather depended

on the statute law and the common law inheritance. These rights were confirmed, as far as federal law is concerned, by the passage of a Canadian bill of rights — An Act for the Recognition and Protection of Human Rights and Fundamental Freedoms (SC 1960, c.44) assented to August 10, 1960.

The right to use either the English or the French language in the House of Commons, the Senate, the legislature of Quebec and the federal and Quebec courts is constitutionally guaranteed by Section 133 of the BNA Act. The use of English and French in the administration of the federal government and its Crown corporations is dealt with in the Official Languages Act (RSC 1970, c.O-2) assented to July 9, 1969. That act provides that government notices to the public, certain orders and regulations, and final decisions of federal courts are to be made or issued in both languages and that, in the national capital region and in federal bilingual districts, government services are to be available in both languages. The commissioner of official languages is responsible for ensuring compliance with this act.

2.1.1 Amendment of the constitution

No provision was made in the BNA Act for its amendment by any legislative body in Canada but both the Parliament of Canada and the provincial legislatures were given legislative jurisdiction with respect to certain matters relating to government. For example, the Parliament of Canada was given jurisdiction over the establishment of electoral districts and election laws and the privileges and immunities of members of the Senate and House of Commons. Each provincial legislature was empowered to amend the constitution of its province except as regards the office of lieutenant-governor. Amendments to the BNA Act have been made by the British Parliament on 14 occasions since 1867. By an amendment to the BNA Act in 1949, the authority of the Parliament of Canada to legislate with respect to constitutional matters was considerably enlarged and it may now amend the constitution of Canada except as regards the legislative authority of the provinces, the rights and privileges of provincial legislatures or governments, schools, the use of English or French and the provision that no House of Commons shall continue for more than five years other than in time of real or apprehended war, invasion or insurrection.

The search for a satisfactory procedure for amending the constitution in Canada which satisfies the need to safeguard basic provincial and minority rights and yet possesses sufficient flexibility to ensure that the constitution can be altered to meet changing circumstances has been the subject of repeated consideration in Parliament as well as in a series of federal-provincial conferences and meetings held in 1927, 1935-36, 1950 and 1960-61. In October 1964 the text of a draft bill "to provide for the amendment in Canada of the constitution of Canada," which embodied an amending procedure or formula and was recommended by a conference of attorneys general, was unanimously accepted by a conference of the prime minister and the premiers. Quebec subsequently withdrew its approval of the formula and it was never adopted.

Between February 1968 and June 1971, eight federal-provincial conferences were held to study the drafting of a new constitution. A committee was established to help study constitutional questions. The provincial governments, with one exception, and the federal government submitted proposals for a new constitution. The discussions culminated in the drafting of a constitutional charter which set out specific constitutional reforms, including a revised amendment procedure. The charter was considered at a constitutional conference in Victoria in June 1971 but was not accepted.

Federal-provincial conferences of first ministers were convened in October 1978 and February 1979 where a wide range of issues relating to a renewed constitution were discussed, including changes in some central institutions (the Senate and the Supreme Court), an entrenched charter of rights and freedoms, modifications in the distribution of legislative powers, and an amending formula. This initiative was to be continued through a Continuing Committee of Ministers on the Constitution.

2.1.2 Treaty-making powers

The federal government is responsible for the conduct of external affairs. The policy in discharging this responsibility is to promote the interest of the entire country.

Political evolution of Canada



In matters of specific concern to the provinces, it is Canadian government policy to assist them in achieving their particular aspirations and goals, as illustrated by the “entente” signed by Quebec and France in the field of education in February 1965. Provincial and federal authorities co-operated in a procedure that enabled Quebec, within the framework of the constitution and national policy, to participate in international arrangements. Once it is determined that what a province wishes to achieve in the field of provincial jurisdiction falls within the framework of Canadian foreign policy, the provinces may discuss arrangements with the authorities of the country concerned. For a formal international agreement the federal signature of treaties and conduct of overall foreign policy must come into operation.

Distribution of federal and provincial powers

2.2

Since the purpose of the BNA Act was to create a federal system of government, important provisions of that document deal with the division of powers between the federal and provincial governments. Each level of government is virtually sovereign with respect to the powers it exercises. While the federal government under the BNA Act has the power to disallow provincial legislation, this power has not been exercised in recent years.

Section 91 of the BNA Act gives the Parliament of Canada a general power to “make laws for the peace, order and good government of Canada” and lists classes of subjects over which Parliament has exclusive authority which illustrate but do not restrict the general power. The list contains 31 classes of federal powers such as regulation of trade and commerce, defence, currency, raising money by any mode or system of taxation, postal services, navigation and shipping, weights and measures and

criminal law. Section 92 assigns to the provinces the power to legislate regarding direct taxation within the province, the management and sale of public lands and timber belonging to the province, municipal institutions, laws relating to property and civil rights and all matters of a merely local or private nature. (For details see *Canada Year Book 1973* pp 71-73.) Section 95 of the BNA Act gives the federal government and the provinces concurrent powers over agriculture and immigration but federal law prevails in cases where the laws of both levels of government are in conflict. Similar concurrent powers exist in respect of old age pensions and supplementary benefits, including survivors and disability benefits, but no federal legislation affects the operation of provincial laws in this field if a conflict occurs with provincial legislation.

The drafters of the BNA Act in 1867 probably thought that such a division of powers was so definite and precise that no future difficulties would arise in deciding what subjects were under federal or provincial legislative control. However, the powers enumerated in Sections 91 and 92 are not mutually exclusive and sometimes overlap. Interpretation on the division of powers has caused legal disputes, parliamentary discussions, royal commission inquiries and federal-provincial conferences.

Difficulty in interpreting the division of powers has also resulted from new social, technological and political conditions, unforeseen at the time of Confederation. Social welfare legislation, such as unemployment insurance, and legislation concerning modern communication facilities were not contemplated by the drafters of the BNA Act. However, power to legislate on these subjects had to be assigned either to the federal or provincial governments by reference to the BNA Act. Canada's emergence into the international community as an independent nation, also not foreseen in 1867, required the courts to determine the allocation of legislative responsibility for such matters as aviation, broadcasting and citizenship.

One significant outcome of the allocation of powers under the BNA Act has been that expenditures of the provincial governments have often outstripped their tax resources. In 1867, the provinces were assigned responsibility for social services such as hospitals and schools as well as for municipal institutions. At that time this did not involve major expenditure of public funds. However, changing demands of society and entry of government into the field of social welfare led to expenditure of large sums. The provinces have the power to levy direct taxation within the province for provincial purposes while the federal government has a broader authority to levy taxes by "any means of taxation." The federal government therefore has substantial tax resources. While the provinces have responsibility for many costly public institutions they often lack the necessary financial resources. To redress this, numerous federal-provincial tax-sharing agreements and shared-cost programs have been reached by the federal and provincial governments. Such agreements had not been anticipated by the original drafters of the BNA Act. Nevertheless these agreements have resulted in new constitutional arrangements and techniques for dealing with federal-provincial economic relations and have come to be known collectively as co-operative federalism.

2.3 The legal system

2.3.1 Common law and Quebec civil law

The legal system in the provinces and territories is derived from the common law system of England with the exception of Quebec, where the system has been influenced by the legal developments of France. Quebec has its own civil code and code of civil procedure. However, in the field of public law the principles of common law apply. Over the years, both Canadian common law and Quebec civil law have developed unique characteristics. The body of law changes as society changes. In many provinces there are law reform commissions which have been charged with the function of inquiring into matters relating to the reform of both the statute law and the common law. A general revision of the civil code is taking place in Quebec under the auspices of the Civil Code Revision Office. At the federal level the Law Reform Commission of Canada studies and reviews on a continuing basis the statutes and other laws of Canada with a view to making recommendations for their improvement, modernization and reform.

Criminal law

2.3.2

Criminal law is that branch or division of law which deals with crimes and their punishment. A crime may be described as an act against society, as distinct from a dispute between individuals. It has been defined as any act done in violation of those duties which an individual owes to the community and for the breach of which the law has provided that the offender shall be punished.

Canada's criminal law has as its foundation the criminal law of England built up through the ages and consisting first of customs and usages and later expanded by principles enunciated by generations of judges. There is no statutory declaration of the introduction of English criminal law into those parts of Canada that are now New Brunswick, Nova Scotia and Prince Edward Island. Its introduction there depends upon a principle of the common law itself by which English law was declared to be in force in uninhabited territory discovered and planted by British subjects, except insofar as local conditions made it inapplicable. The same may be said of Newfoundland although the colony dealt with the subject in a statute of 1837. In Quebec, its reception depends upon the Royal Proclamation of 1763 and the Quebec Act of 1774. In each of the other provinces and in Yukon and Northwest Territories, the matter has been dealt with by statute.

The criminal law systems of the provinces as they exist today are based on the British North America Act of 1867. Section 91 of the act provides that "exclusive legislative authority of the Parliament of Canada extends to . . . the criminal law, except the constitution of courts of criminal jurisdiction but including the procedure in criminal matters." By Section 92, the legislature of the province exclusively may make laws in relation to "the administration of justice in the province, including the constitution, maintenance, and organization of provincial courts, both of civil and criminal jurisdiction and including procedure in civil matters in those courts." The Parliament of Canada may, however (Section 101), establish any additional courts for the better administration of the laws of Canada. The Statute of Westminster, 1931 effected important changes, particularly by abrogating in part the Colonial Laws Validity Act, 1865 (British) and confirming the right of a dominion to make laws having extraterritorial operation.

At the time of Confederation each of the colonies had its own body of statutes relating to criminal law. In 1869, in an attempt to assimilate them into a uniform system applicable throughout Canada, Parliament passed a series of acts, some dealing with specific offences and others with procedure. Most notable of the latter was the Criminal Procedure Act, but other acts provided for the speedy trial or summary trial of indictable offences, the powers and jurisdiction of justices of the peace in summary conviction matters and otherwise, and the procedure in respect of juvenile offenders.

Codification of the criminal law through a criminal code bill founded on the English draft code of 1878, Stephen's *Digest of criminal law*, Burbridge's *Digest of the Canadian criminal law*, and the relevant Canadian statutes was brought about by the justice minister, Sir John Thompson, in 1892. This bill became the Criminal Code of Canada and came into force on July 1, 1893. However, the criminal code was not exhaustive of the criminal law. It was still necessary to refer to English law in certain matters of procedure and it was still possible to prosecute for offences at common law. Moreover, Parliament has declared offences under certain other acts such as the Narcotic Control Act, to be criminal offences.

An examination and study of the criminal code was authorized by order-in-council in February 1949. The commission revising the code presented its report with a draft bill in February 1952. After coming before successive sessions of Parliament it was finally enacted in June 1954 and the new criminal code (RSC 1970, c.C-34) came into effect in April 1955. Since then a number of important amendments have been made. These include inter alia, a statutory definition of obscenity and authorization of the seizure and condemnation of offending material without a charge necessarily being laid against any person; crimes of genocide and public incitement of hatred; offences committed in aircraft in flight over the high seas; procedures relating to the invasion of privacy and interception of communications; the forbidding of publication in a newspaper or

broadcast of any evidence tendered at a preliminary inquiry unless and until the accused has been discharged or, if the accused has been committed for trial, the trial has ended; the elimination of the death penalty for all offences except certain ones under the National Defence Act; the modifying of offences relating to gaming and lotteries, drinking and driving, homosexual acts and therapeutic abortion; certain reforms of the jail system; offences relating to hijacking and endangering the safety of aircraft; the abolishing of offences of vagrancy and attempted suicide; and conditional and absolute discharges for convicted persons.

2.3.3 Human rights

In 1960 (RSC 1970, Appendix III) Parliament enacted the Canadian Bill of Rights. Although the act sets out further details, its general scope appears in Section 1: "It is hereby recognized and declared that in Canada there have existed and shall continue to exist without discrimination by reason of race, national origin, colour, religion or sex, the following human rights and fundamental freedoms, namely, (a) the right of the individual to life, liberty, security of the person and enjoyment of property, and the right not to be deprived thereof except by due process of law; (b) the right of the individual to equality before the law and the protection of the law; (c) freedom of religion; (d) freedom of speech; (e) freedom of assembly and association; and (f) freedom of the press."

In 1977, the Canadian Human Rights Act was passed which, within the federal area of legislative competence, outlawed discrimination on grounds of race, national or ethnic origin, colour, religion, age, sex, marital status, conviction for which a pardon has been granted and, with respect to employment, physical handicap in such areas as provision of goods, services, facilities or accommodation, employment, trade union membership, wages, publication of notices and hate messages. Privacy provisions in the act give an individual a right of access to personal information held by government on that individual. The act also established the Canadian Human Rights Commission and a privacy commissioner to administer the rights and obligations in this legislation.

2.4 Courts and the judiciary

2.4.1 The federal judiciary

The Parliament of Canada is empowered by Section 101 of the British North America Act from time to time to provide for the constitution, maintenance and organization of a general court of appeal for Canada and for the establishment of any additional courts for the better administration of the laws of Canada. Under this provision, Parliament has established the Supreme Court of Canada, the Federal Court of Canada and certain specialized courts.

Supreme Court of Canada. This court, first established in 1875 and now governed by the Supreme Court Act (RSC 1970, c.S-19), consists of a chief justice, who is called the chief justice of Canada, and eight puisne judges. The chief justice and the puisne judges are appointed by the Governor-in-Council and hold office during good behaviour but are removable by the Governor General on address of the Senate and the House of Commons. They cease to hold office on attaining the age of 75 years. The court sits at Ottawa and exercises general appellate jurisdiction throughout Canada in civil and criminal cases. The court is also required to consider and advise on questions referred to it by the Governor-in-Council and it may also advise the Senate or the House of Commons on private bills referred to the court under any rules or orders of the Senate or of the House of Commons.

Appeals may be brought from any final judgment of the highest court of final resort in a province by obtaining leave to do so from that court or from the Supreme Court itself. The Supreme Court may grant leave to appeal from any judgment whether final or not, and as well there is provision for appeals whereby the highest court of final resort in a province may grant leave on a question of law alone from a final judgment of some other court in that province. Appeals in respect of indictable offences are regulated by the criminal code. Appeals from federal courts are regulated by the statute establishing

such courts. The judgment of the Supreme Court of Canada in all cases is final and conclusive.

Chief Justice and Judges of the Supreme Court of Canada as at April 1, 1980

Chief Justice of Canada, The Rt. Hon. Bora Laskin, PC (*appointed December 27, 1973, first appointed a Judge of the Supreme Court, March 23, 1970*)
 The Hon. Mr. Justice Ronald Martland (*appointed January 15, 1958*)
 The Hon. Mr. Justice Roland Almon Ritchie (*appointed May 5, 1959*)
 The Hon. Mr. Justice Robert George Brian Dickson (*appointed March 26, 1973*)
 The Hon. Mr. Justice Joseph Philemon Jean Marie Beetz (*appointed January 1, 1974*)
 The Hon. Mr. Justice Willard Zebedee Estey (*appointed September 29, 1977*)
 The Hon. Mr. Justice William Rogers McIntyre (*appointed January 1, 1979*)
 The Hon. Mr. Justice Julien H. Chouinard (*appointed September 24, 1979*)
 The Hon. Mr. Justice Antonio Lamer (*appointed March 28, 1980*).

Federal Court of Canada. The Federal Court of Canada was constituted by an act of the Parliament of Canada under Section 101 of the British North America Act, 1867, which, after authorizing the creation of the Supreme Court of Canada, confers on Parliament authority to constitute other courts for the better administration of the laws of Canada. The Federal Court of Canada is a court of law, equity and admiralty and it is a superior court of record having civil and criminal jurisdiction (Section 3 of the act). The Exchequer Court of Canada, (established in 1875), was replaced in December 1970 by the Federal Court of Canada (SC 1970-71, c.1).

The court has two divisions called the Federal Court — Appeal Division, and the Federal Court — Trial Division. The appeal division may be called the Court of Appeal or Federal Court of Appeal (Section 4 of the act). The Court of Appeal consists of the chief justice of the Federal Court of Canada and five other judges. The trial division consists of the associate chief justice of the Federal Court of Canada and nine other judges. Every judge is an ex officio member of the division of which he is not a regular member (Section 5).

While all judges must live in or near the national capital region (Section 7), each division of the court can sit any place in Canada and the place and time of the sittings must be arranged to suit the convenience of the litigants (Sections 15 and 16). There is also authority in the statute (Section 7) for a rotation of judges to provide for a continuity of judicial availability in any place where the volume of work, or other circumstances, makes such an arrangement expedient.

Judges of the Federal Court of Canada as at April 1, 1980

Chief Justice, The Hon. Arthur Louis Thurlow (*appointed January 4, 1980*)
 Associate Chief Justice, The Hon. James A. Jerome (*appointed February 18, 1980*)
 Court of Appeal Judges: The Hon. Mr. Justice Louis Pratte (*appointed to Trial Division, June 10, 1971; appointed to Court of Appeal, January 25, 1973*), The Hon. Mr. Justice John J. Urie (*appointed April 19, 1973*), The Hon. Mr. Justice William F. Ryan (*appointed April 11, 1974*), The Hon. Mr. Justice Gerald Eric Le Dain (*appointed September 1, 1975*) The Hon. Mr. Justice Darrel V. Heald (*appointed to Trial Division, July 9, 1971; appointed to Court of Appeal, December 4, 1975*)
 Trial Division Judges: The Hon. Mr. Justice A. Alex. Cattanach (*appointed June 1, 1971*), The Hon. Mr. Justice Hugh F. Gibson (*appointed June 1, 1971*), The Hon. Mr. Justice Allison A.M. Walsh (*appointed June 1, 1971*), The Hon. Mr. Justice Frank U. Collier (*appointed September 16, 1971*), The Hon. Mr. Justice George A. Addy (*appointed September 17, 1973*), The Hon. Mr. Justice Patrick M. Mahoney, PC (*appointed September 13, 1973*), The Hon. Mr. Justice Raymond G. Décary (*appointed September 14, 1973*), The Hon. Mr. Justice Jean-Eudes Dubé, PC (*appointed April 9, 1975*), The Hon. Mr. Justice Louis Marceau (*appointed December 23, 1975*).

The provincial judiciary

Certain provisions of the British North America Act govern to some extent the provincial judiciary. Under Section 92(14) the legislature of each province exclusively may make laws in relation to the administration of justice in the province including the constitution, maintenance and organization of provincial courts of both civil and criminal jurisdiction. Section 96 provides that the Governor General shall appoint the

2.4.2

judges of the superior, district and county courts in each province, except those of the courts of probate in Nova Scotia and New Brunswick.

2.4.3 The territorial judiciary

In 1971 amendments [now cited as RSC 1970, c.48 (1st Supplement)] to the Yukon Act and the Northwest Territories Act were proclaimed in force, simultaneously with certain ordinances of the Yukon Territory and the Northwest Territories, allowing the territorial governments to assume responsibility for the administration of justice other than the conduct of criminal prosecutions.

In the Yukon Territory, provision was made for a territorial (now supreme) court, a magistrate's court, justices of the peace and a court of appeal. The supreme court consists of a single judge of superior court rank; the magistrate's court consists of one full-time judge and several deputy magistrates. Both are located in Whitehorse, although from time to time magistrate's court sittings are held in other communities. There are 32 justices of the peace, appointed by the commissioner, located at 15 points in Yukon. The judge of the Supreme Court of the Northwest Territories is ex officio judge in Yukon and vice versa. The court of appeal consists of the chief justices of British Columbia, the justices of appeal of British Columbia and the judge of the Supreme Court of the Northwest Territories.

The court system in the Northwest Territories consists of a superior court called the Supreme Court of the Northwest Territories, presided over by one judge located in Yellowknife. The Court of Appeal of the Territories consists of the chief justice of Alberta, justices of appeal of Alberta and the judges of Yukon and Northwest Territories supreme courts. There are also three full-time magistrates appointed by the commissioner who have jurisdiction similar to provincial judges; a number of justices of the peace, also appointed by the commissioner, serve in widely scattered settlements.

2.4.4 Salaries, allowances and pensions of judges

Section 100 of the British North America Act provides that the salaries, allowances, and pensions of the judges of the superior, district, and county courts (except the courts of probate in Nova Scotia and New Brunswick) and of the admiralty courts in cases where the judges thereof are for the time being paid by salary, shall be fixed and provided by the Parliament of Canada. These are provided under the Judges Act (RSC 1970, c.J-1 as amended by SC 1970-71, c.55, SC 1973-74, c.17, SC 1974-75, c.48, SC 1978-79, c.11).

The salary of the chief justice of Canada is \$69,000 a year and that of a puisne judge of the Supreme Court of Canada \$64,000. The salary of the chief justice and of the associate chief justice of the Federal Court of Canada is \$59,000 a year and of the other judges of the court \$54,000.

All chief justices and associate chief justices of provincial superior courts receive annual salaries of \$59,000; the puisne judges of these courts and the judges of the two territorial courts receive \$54,000. The chief and associate chief judges of county and district courts receive salaries of \$52,000 a year and the remaining judges and junior judges of all county and district courts \$47,000.

Every judge who receives a salary under the Judges Act is paid an additional salary of \$3,000 a year as compensation for any extra-judicial services that he may be called upon to perform by the federal government or the government of a province, and for incidental expenditures that proper execution of his office may require. In the case of each judge of the Federal Court of Canada and of the territorial courts of Yukon and Northwest Territories an additional allowance of \$3,000 a year is paid as compensation for special incidental expenditures.

One of the cornerstones of Canadian parliamentary democracy lies in the independence of the judiciary. Because the person responsible for litigating matters on behalf of the Canadian government (the attorney general of Canada) is the same as the one responsible for administering the provisions of the Judges Act (the minister of justice), there has been some concern expressed that the judges before whom the attorney general appears may not seem to be as independent as they ought to be. Therefore, in 1977 the Judges Act was amended to provide for an independent commissioner for federal judicial affairs who is to act independently of the justice

department in carrying out ministerial responsibilities with respect to matters in the Judges Act, and personnel, financial and accommodation arrangements on behalf of the Federal Court and the Canadian Judicial Council. The registrar of the Supreme Court of Canada is entrusted with the same responsibilities on behalf of that court.

Legal services

2.5

The legal profession

2.5.1

The adjective “fused” is sometimes used to describe the legal profession in common law Canada since practising lawyers are both called as barristers and admitted as solicitors. Admission to practise is a provincial matter. Statutes setting out the powers and responsibilities of the provincial organizations are: (Alberta) The Legal Profession Act RSA 1970, c.203; (British Columbia) The Legal Professions Act RSBC 1960, c.214; (Manitoba) The Law Society Act RSM 1970, c.L-100; (New Brunswick) The Barristers’ Society Act, 1973, SNB 1973, c.80; (Newfoundland) The Law Society Act RSN 1970, c.201; (Nova Scotia) Barristers and Solicitors Act RSNS 1967, c.18; (Ontario) The Law Society Act RSO 1970, c.238; (Prince Edward Island) The Law Society and Legal Profession Act RSPEI 1974, c.L-9; (Saskatchewan) The Legal Profession Act RSS 1965, c.301; (Northwest Territories) The Legal Profession Ordinance RONWT 1956, c.57; and (Yukon) The Legal Profession Ordinance ROY 1971, c.L-4. In Quebec the legal profession is divided into the separate branches of advocate and notary and their statutes are the Bar Act, SQ 1966/67, c.77 and the Notarial Act, SQ 1968, c.70.

Legal aid

2.5.2

For many years the provision of legal services to persons unable to afford the fees normally charged by a lawyer was viewed as a responsibility to be assumed by individual lawyers on a voluntary basis as a form of charity. In more recent times all provincial governments have moved to establish publicly funded legal aid programs under which persons of limited means may obtain the services of a lawyer in a number of criminal and civil matters at either no cost or modest cost to themselves depending upon the clients’ financial circumstances. The lawyers who act for clients in matters covered by a provincial legal aid program are then paid by the government, usually at a reduced rate, on a fee-for-services basis or by salary depending upon the type of legal aid program operated in the province. The provincial legal aid programs vary considerably in terms of formalities, scope of coverage and methods of providing services. Some are established by legislative enactment while others exist and operate by way of informal agreements between the provincial government and the law society. Some programs provide for fairly comprehensive coverage in both criminal and civil matters while others at present encompass only criminal offences. In some provinces a mixed system is in operation.

In 1971 the federal government entered the field and concluded an agreement with the government of the Northwest Territories for sharing the costs of providing legal aid in both criminal and civil matters for persons in the territories financially unable to retain the services of a lawyer. This program was implemented on August 17, 1971. A federal-territorial agreement with the Yukon Territory was entered into in 1977 which provided for a similar cost-shared program retroactive to April 1, 1976.

In August 1972, the federal government announced that it was prepared to enter into agreements under which federal funds would be paid to the provinces to assist them in developing or expanding their legal aid programs in matters related to criminal law. Agreements have since been concluded with all provincial governments. Amendments to these agreements now provide for a federal contribution of the lesser of a per capita amount or 90% of expenditures toward the costs of providing lawyers’ services to eligible persons subject to criminal charges or proceedings under federal laws. The per capita contribution is set according to a formula which escalates as costs rise. In the 1978-79 fiscal year the federal contribution was expected to be approximately 91 cents per capita. These federal-provincial agreements enable the provincial governments to determine the method or methods by which legal services will be provided to persons who qualify for assistance, but in cases where an individual is charged with a criminal

offence carrying a penalty of mandatory life imprisonment that person is entitled to retain a lawyer of his or her own choice. The agreements also ensure that a person otherwise eligible to receive legal aid will not be disqualified as a recipient only because he or she is not a resident of the province in which the criminal proceedings take place.

2.6 The federal Department of Justice

Lawyers in the department may be assigned as legal advisers to other government departments or agencies as part of departmental legal services, or to offices in Vancouver, Edmonton, Saskatoon, Winnipeg, Toronto, Montreal, Halifax and Yellowknife as part of regional legal services. Other services are provided through branches at headquarters in Ottawa.

Advisory and research services. This section prepares legal opinions requested by the federal government and its departments and agencies.

Constitutional, administrative and international law. This section co-ordinates and provides legal advice in the general fields of constitutional and administrative law within the federal government and its various departments and agencies. It is concerned with long-term policy in constitutional affairs and problems of federal-provincial relations. The section also deals with the areas of public and private international law. Canada became a member of The Hague Conference on Private International Law in 1968 and the department is responsible for Canadian participation. This section co-ordinates Canadian activities in the conference and has a similar role with regard to Unidroit, the International Institute for the Unification of Private Law.

Jurimetrics. This section of the public law branch involves the application of modern technology to law. The department's Jurimetrics adviser oversees the application of electronic data processing of bills, statutes and regulations and the development of electronic storage and retrieval of statutory information.

Civil law. This branch conducts litigation and gives legal advice to the government on all matters of a non-criminal nature arising in Quebec.

Civil litigation. The lawyers in this section are responsible for the conduct of non-criminal litigation, other than tax litigation and involving the federal government, originating in those provinces where the common law prevails. This litigation includes customs and excise duty matters, expropriation cases, disputes over contracts, accident claims, suits for defamation and claims for breach of copyright.

Tax litigation. The lawyers in this section represent the Crown in all aspects of most federal tax litigation.

Criminal law. This branch is responsible for prosecutions for infraction of federal statutes and, in the Northwest Territories and Yukon, the enforcement of criminal law. It advises the minister of justice with respect to amending the Criminal Code of Canada. The criminal law prosecutions section conducts prosecutions in the national capital region, Northern Ontario and Northwest Quebec. The regional offices are generally responsible for prosecutions in all other areas of the country. This section conducts appeals to the Federal Court and the Supreme Court of Canada in criminal matters, recommends appointments of standing agents to the minister and deals with applications for new trials or references to provincial courts of appeal. The criminal law amendment section studies the Criminal Code of Canada with a view to ensuring that it remains effective and workable. It is involved in developing and implementing legislative amendments and negotiates with the provinces on criminal law changes.

Legislative programming. The legislation section is responsible for drafting all bills presented to Parliament and for ensuring that they are consistent with the purpose and provisions of the Canadian Bill of Rights. The Privy Council section provides legal advice to the Privy Council office, prepares regulations under statutes, reviews all statutory instruments in accordance with the Statutory Instruments Act and ensures that all regulations are consistent with the purpose and provisions of the Canadian Bill of

Rights. The statute revision commission consisting of a chairman and two other members, all justice department employees, revises and consolidates federal statutes and regulations.

Policy planning. This section is responsible for identifying emerging issues and developing policy initiatives in response. It analyzes and assesses recommendations of the Law Reform Commission of Canada and ensures consultation with those who are likely to be affected by a change in legislation.

Programs and law information development. This section is responsible for developing and implementing law-related programs of the department.

Property and commercial law. This branch is responsible for non-litigious legal work relating to land and the acquisition of land throughout Canada, except in Quebec, by purchase and expropriation. It also works on cases involving the disposition of land by Letters Patent. It also deals with all commercial law matters involving the federal government.

Police forces

2.7

Organization of police forces

2.7.1

The police forces of Canada are organized in three groups: (1) the federal force, the Royal Canadian Mounted Police (RCMP); (2) provincial police forces — Ontario and Quebec have their own police forces; the RCMP performs parallel functions in all other provinces; and (3) municipal police forces — most urban centres have their own police forces or provincial police, under contract, to attend to police matters. In addition, the Canadian National Railways, the Canadian Pacific Railway Co. and the National Harbours Board have their own police forces.

The Royal Canadian Mounted Police. This is a civil force maintained by the federal government. It was established in 1873 as the North-West Mounted Police for service in what was then the North-West Territories and, in recognition of its services, was granted the prefix “Royal” by King Edward VII in 1904. Its sphere of operations was expanded in 1918 to include all of Canada west of Port Arthur and Fort William (now Thunder Bay). In 1920 it absorbed the Dominion Police, its headquarters was transferred from Regina to Ottawa and its title changed to Royal Canadian Mounted Police.

The force operates under authority of the Royal Canadian Mounted Police Act (RSC 1970, c.R-9). It is responsible to the solicitor general and is controlled and managed by a commissioner who holds the rank and status of a deputy minister and is empowered to appoint members to be peace officers in all provinces and territories.

Administration of justice within the provinces, including enforcement of the Criminal Code of Canada, is part of the power and duty delegated to the provincial governments. All provinces except Ontario and Quebec have entered into contracts with the RCMP to enforce criminal and provincial laws, under direction of the respective attorneys general. In these eight provinces, the force is under agreement to provide police services to 195 municipalities, assuming enforcement responsibility of municipal as well as criminal and provincial laws within these communities. Yukon and Northwest Territories are policed exclusively by the RCMP and therefore criminal offences, federal statutes and all ordinances of the territories fall within their responsibility. The force maintains liaison officers in London, Paris, Bonn, Rome, Hong Kong, Washington, Sydney, Vienna, Buenos Aires, Brussels, Santiago, Bogota, New Delhi, Abidjan, Tel Aviv, Kingston, Tokyo, Nairobi, Beirut, Mexico City, The Hague, Lima, Manila, Stockholm, Berne, Bangkok, Port of Spain, and represents Canada in the International Criminal Police Organization, which has headquarters in Paris.

The force has 13 operational divisions across Canada; they comprise two districts and 41 subdivisions which include 726 detachments. Headquarters division, as well as the office of the commissioner, is in Ottawa. Divisional headquarters, for the most part, are located in the provincial or territorial capitals.

A police information centre at RCMP headquarters is staffed and operated by the force. Law enforcement agencies throughout Canada have access via remote terminals to information on stolen vehicles, licences, wanted persons and stolen property.

The RCMP operates the Canadian Police College at which force members and selected representatives of other Canadian and foreign forces may study crime prevention and detection.

As of November 30, 1978 the force had a total authorized strength of 19,155 including regular members, special constables, civilian members and public service employees.

Ontario Provincial Police. The Ontario Provincial Police, a Crown force, is the third largest deployed force in North America with an authorized strength of more than 5,000 (1979) uniformed and civilian personnel.

The OPP is administered from general headquarters at Toronto by the commissioner, under the solicitor general's ministry. Other senior executive officers include two deputy commissioners and six assistant commissioners. The force has two principal sides — operations and services — each administered by a deputy commissioner. In turn, six divisions at the next level — field, traffic, management, staff services, special services and staff development — are administered by assistant commissioners.

Under provisions of the Ontario Police Act, the force is responsible for: enforcing federal and provincial statutes in those areas that are not required to maintain their own police departments; maintaining a traffic patrol on the more than 21,000 km (kilometres) of highways and 104,607 km of secondary county and township roads; enforcing the Liquor Licence Act for Ontario and maintaining a criminal investigation branch and other specialized branches to assist all other forces in investigating major crimes. A central records and communications branch offers continuous service to all police departments in Ontario on such matters as criminal records.

The OPP operates one of the largest frequency-modulation radio networks in the world, with 107 fixed radio stations and more than 1,532 radio-equipped mobile units including motorcycles, boats and aircraft. It also operates a telecommunications network connecting all 16 districts as well as other police departments on a local, national and international basis.

Quebec Police Force. Under the authority of the attorney general, the Quebec Police Force is responsible for maintaining peace, order and public safety throughout the province, and for prevention and investigation of criminal offences and violations of provincial law. The force is under the command of a director general assisted by five assistant directors general and a director of personnel and communications.

For police purposes, the province is divided into nine districts each under the command of a chief inspector or an inspector and named as follows: Bas St-Laurent, Saguenay-Lac St-Jean, Quebec, Mauricie, Estrie, Montreal, Outaouais, Nord-Ouest and Côte-Nord. Strength of the force at the end of March 1979 was 4,394 members and 1,032 civilian employees.

Municipal police forces. Provincial legislation makes it mandatory for cities and towns to furnish adequate municipal policing for the maintenance of law and order in their communities. Also, all villages and townships or parts of townships having a population density and a real property assessment sufficient to warrant maintenance of a police force, and having been so designated by order-in-council, are responsible for policing their municipalities.

2.7.2 Uniform crime reporting

The present method of reporting police statistics, known as the Uniform Crime Reporting Program, was started on January 1, 1962.

Police personnel in Canada numbered 65,037 at the end of 1977, including 52,303 sworn-in police officers, 12,190 other full-time employees serving as clerks, technicians, artisans, commissionaires, guards, special constables and 544 cadets. The ratio of police personnel per 1,000 population was 2.8 and the ratio of police was 2.3. Provincial and

territorial ratios for police personnel ranged from 1.7 to 5.5 per 1,000 persons and for police only from 1.5 to 5.0. Total municipal police personnel numbered 38,152 made up of 35,045 members of municipal forces, 3,057 Royal Canadian Mounted Police and 50 Ontario Provincial Police under municipal contracts.

Six policemen were killed by criminal action during 1977. Police facilities at year end included 13,312 automobiles, 817 motorcycles and 1,293 other motor vehicles.

Table 2.3 shows the number of crimes dealt with by police in 1976 and 1977 including offences under the criminal code, federal statutes, provincial statutes and municipal bylaws other than traffic. In 1977 offences reported or known to police which investigation proved unfounded are not shown but numbered 125,378 including 101,288 under criminal code classifications; 14,270 under federal statutes; 7,758 under provincial statutes and 2,062 under municipal bylaws.

During 1977, police reported 135,745 offences against persons including 624 murders, 684 attempted murders, 78 manslaughters, five infanticides, 10,932 rape and other sexual offences, and 103,931 offences of wounding and other assaults (not indecent). All offences against the person resulted in the charging of 49,836 persons, 4,155 of them juveniles. During the year there were 1,059,688 cases of robbery, breaking and entering, theft, fraud and other offences against property resulting in 207,171 persons charged, 48,279 of them juvenile males and 7,145 juvenile females. There were 2,843 cases of prostitution, 3,487 gaming and betting, 13,432 offensive weapons and 438,825 other criminal code offences. In addition to 65,782 offences under various federal statutes, there were 63,131 under the Narcotic Control Act and 2,807 under the controlled and restricted drug parts of the Food and Drugs Act. These two classifications resulted in the charging of 57,999 persons including 2,286 juvenile males and 465 juvenile females.

There were 83,285 motor vehicles stolen (an estimated 706.2 per 100,000 registered vehicles); 70,155 or 84.2% of these vehicles were recovered.

During 1977, police departments reported 266,972 (256,990 in 1976) criminal code traffic offences resulting in 192,529 (184,751) persons charged, 8,647 (7,274) of them females. Total traffic charges under other federal statutes numbered 17,429 (14,734); under provincial statutes 2,789,894 (2,674,074); and under municipal bylaws excluding parking 393,122 (357,940).

Crime and delinquency

2.8

Adult offenders and convictions

2.8.1

Offences may be classified under two headings, indictable offences and offences punishable on summary conviction. Indictable offences are grouped in two main categories: offences that violate the criminal code and offences against federal statutes. These include the more serious crimes. Offences punishable on summary conviction — those not expressly made indictable — include offences against the criminal code, federal statutes, provincial statutes and municipal bylaws. Increases in the total number of summary conviction offences do not measure adequately the increase in the seriousness of crime. Many summary conviction offences amount to mere disturbances of the peace, minor upsets to public safety, health and comfort such as parking violations, intoxication and practising trades without licence. Nevertheless, summary conviction offences may include more serious charges such as assault and contribution to juvenile delinquency.

Adults convicted of indictable offences. Statistics are collected on persons convicted of indictable offences. Although individuals may be charged with more than one offence, only one is tabulated for each person and is selected according to the following criteria: if the person was tried on several charges, the offence is that for which proceedings were carried to the farthest stage — conviction and sentence; if there were several convictions, the offence is that for which the heaviest punishment was awarded; if the final result of proceedings on two or more charges was the same, the offence is the more serious one, as measured by the maximum penalty allowed by the law; and if a person was prosecuted for one offence and convicted of another, such as a person charged with

murder and convicted of manslaughter, the offence is the one for which the person was convicted.

Table 2.6 classifies indictable offences by type of offence. Class I covers offences against the person. Classes II to IV deal with offences against property. Thefts predominate among the offences in these classes, and breaking and entering, extortion and robbery — serious crimes which involve acts of violence — are the next most numerous. Class V deals with offences relating to currency and Class VI with miscellaneous offences; among the latter, the most numerous convictions are for offences connected with gaming, betting and lotteries.

Two kinds of sentences — probation and commitment to an institution — link the person dealt with by the court and the legal institutions of a community. There are several types of institutions — penitentiaries, reformatories, jails and industrial farms. Theoretically, each has a specific purpose which is supposed to be taken into account when arriving at a legal decision. In practice, however, the availability of an institution in a given community is a factor in determining the court decision.

Convictions for summary conviction offences. Offences punishable on summary conviction under the criminal code or under the provincial summary conviction acts can be tried by magistrates and justices of the peace. Data relating to these offences are based on convictions; no information is available on either the number of persons involved in these offences or the number of charges.

2.8.2 Juvenile delinquents

Juvenile delinquent, as defined in the Juvenile Delinquents Act, means any child who violates any provision of the criminal code, any federal or provincial statute, any bylaw or ordinance of any municipality, who is guilty of sexual immorality or any similar form of vice, or who is liable by reason of any other act to be committed to an industrial school or juvenile reformatory under the provision of any federal or provincial statute. The commission by a child of any of these acts constitutes an offence known as a delinquency. The upper age limit of children brought before the juvenile courts in the provinces varies. The Juvenile Delinquents Act defines a child as meaning any boy or girl apparently or actually under 16 or such other age as may be directed in any province. In Prince Edward Island, Nova Scotia, New Brunswick, Ontario and Saskatchewan under 16 is the official age; in Alberta under 16 for boys and under 18 for girls; in Newfoundland and British Columbia under 17; and in Quebec and Manitoba under 18 years. Up to 1967, it was the practice of Statistics Canada to publish information about juvenile delinquents 16 and over separate from that of juveniles under 16. From 1968 on, the figures include all those considered as juveniles by the respective provinces, regardless of the differing upper age limits.

Should a juvenile be brought before the courts and charged with committing more than one offence during the year, only one delinquency — the most serious — is selected for tabulation. With the exception of Manitoba, juveniles involved only in informal hearings are not included. Also excluded are children presenting conduct problems which were not brought to court or which were dealt with by the police, social agencies, schools or youth-serving agencies. Thus, community facilities for dealing with children's problems may influence the number of cases referred to court and, therefore, the statistics.

2.9 Correctional institutions

Correctional institutions may be classified under three headings: training schools — operated by the provinces or private organizations under provincial charter for juvenile offenders serving indefinite terms up to the legal age for children in the particular province; provincial adult institutions; and penitentiaries — operated for adult offenders by the federal government in which sentences of over two years are served.

2.9.1 Correctional service of Canada

The correctional service operates under the Penitentiary Act and is under the jurisdiction of the solicitor general. It is responsible for all federal penitentiaries and for

care and training of persons committed to those institutions. The commissioner of corrections, under direction of the solicitor general, is responsible for control and management of the service.

Headquarters of the correctional service is in Ottawa. Regional directorates are in Vancouver, BC; Kingston, Ont.; Ville de Laval, Que.; Saskatoon, Sask.; and Moncton, NB. There are five correctional staff colleges: at Kingston, Ville de Laval, New Westminster, Edmonton and Moncton, where personnel are trained and given refresher courses.

At December 31, 1978, the penitentiary service controlled 58 institutions at three security levels, maximum, medium and minimum. Maximum security institutions include psychiatric centres where specialized medical service is given to inmates. Total inmate population was 9,470, including 107 female offenders. New, smaller institutions have been built, providing vocational and academic training, and indoor and outdoor recreation. Maximum security penitentiaries will be located in Renous, NB; Mirabel, Que.; and Agassiz, BC. Medium security facilities will be built in Donnacona and Drummondville, Que. and Kamloops, BC.

After sentence by the court, prisoners are received at a reception centre, a maximum security institution, where security and training classification is carried out. Based on the results of diagnostic tests at this centre, inmates are placed in an institution which provides the best training program and degree of security required. Minimum stay at the centre is usually six weeks.

Some inmates sentenced to federal penitentiary terms in Newfoundland are held in the provincial centre at St. John's under provisions of the Penitentiary Act which allows for contracts governing exchange of services between the federal government and some provinces.

Minimum security institutions include community correctional centres, forestry camps and farms. Community correctional centres are located in urban communities across Canada and offer parolees contact with potential employers and access to communities as a rehabilitative measure.

In 1978 close to one-third of the inmate population was enrolled full time in educational programs and technical training. Occupational development programs provide inmates with academic courses at all levels up to university graduation and technical training. Vocational education offers more than 100 courses in 15 occupations. Almost all academic and technical courses are recognized for accreditation or trade certification by provincial authorities.

In the temporary absence program 43,320 permits were granted in 1978; 43,108 inmates returned, making the success rate close to 99.5%. Temporary absence is granted for humanitarian, rehabilitative or medical reasons. Evening and weekend activities

Community and provincial board members now share in granting parole and temporary absences, designed to reintegrate inmates into the community.

involving the outside community continued. Committees in which citizens participate operated in all institutions. Community-based programs, such as Alcoholics Anonymous, drama, music instruction, public speaking, lectures, films, recreation, discussion groups led by private agencies, professionals, citizen volunteers and community groups all have a part in the inmate's life. Most institution chapels have multi-purpose programs, where religious instruction is provided. Community participation in religious programs is encouraged.

The parole system

2.9.2

The National Parole Board headquarters is in Ottawa with regional offices in Moncton, Montreal, Kingston, Saskatoon and Vancouver. There are 26 full-time board members, including a chairman and vice-chairman, all appointed by the Governor-in-Council for a

period of up to 10 years. All may be reappointed. The government may also appoint temporary members for a maximum period of one year and a temporary substitute member for a member who is absent or unable to act. Representatives of police forces, of provincial, municipal, or other local governments, of local professional, trade, or community associations in any region may be designated to act as regular members in the review of cases of inmates serving life sentences for murder or indeterminate sentences as dangerous offenders. These persons are known as regional community board members.

The board has exclusive jurisdiction and absolute discretion to grant, refuse, or revoke full parole or day parole for any person serving a sentence of imprisonment imposed under an act of Parliament or for criminal contempt of court. The board has no jurisdiction over a child under the Juvenile Delinquents Act or a person serving an intermittent sentence under Section 663 of the criminal code.

Until recently, only Ontario and British Columbia had their own parole boards, with jurisdiction over the paroling of inmates serving the indefinite portion of a definite-indefinite sentence. Under a section of the Parole Act that came into effect on September 1, 1978, it is now possible for any interested province to establish its own parole board, with jurisdiction over all inmates serving a definite sentence in provincial institutions. To date, Quebec and Ontario have taken advantage of the new legislation.

Parole is a conditional release of a prison or penitentiary inmate who has served a specific portion of the sentence as laid down by law, meets certain criteria and is considered ready to finish his sentence in the community. The inmate is released under specific conditions and remains under supervision until the expiry date of his sentence.

The decision of the board regarding an inmate is based on reports received from the police, the sentencing judge and professional correctional staff. Reports may also be obtained from a psychologist or a psychiatrist. A community investigation is made to gather information about the inmate's family, background, work record and relationship with the community. These reports help the board assess whether the offender can lead a law-abiding life. For any type of release, penitentiary inmates are seen by board members in a hearing. Case review for provincial prisoners is based on written reports.

Inmates who are not serving a life or indeterminate term become eligible for consideration after serving one-third of their sentence or after seven years, whichever comes first. Inmates who have been convicted twice for offences involving violent conduct have to serve one-half of their sentence before parole eligibility. The eligibility date is set by the Parole Act and regulations, and the criminal code.

Before an inmate is eligible for full parole consideration, the board may grant longer part-time releases, known as day parole, for education or training when the course is not available in the institution or for special work projects. Inmates return to the institution or to a special centre regularly, often every night, during the period of release, which may last four months. Most inmates may start a day parole program at the half-way point before their full parole eligibility date. Inmates serving life sentences for murder become eligible three years before their full parole eligibility date. Day parole is often a testing ground for release on full parole.

The board also has authority to grant unescorted temporary absences; this is the first type of release for which penitentiary inmates are eligible. The board must also approve escorted temporary absences for anyone serving a sentence for murder. Temporary absences are given for medical, humanitarian or rehabilitative reasons.

One type of release that is not the result of a board decision is mandatory supervision. Anyone who is not paroled and is released from a federal institution more than 60 days before the end of his sentence, because of earned remission, is subject to supervision for the full period of that remission. This is a release to which the inmate is entitled by law. If an individual does not want to be supervised in the community, his only option is to remain in the penitentiary until he has served all of the sentence. If he chooses mandatory supervision, the release conditions are the same as for parolees.

The parole system provides a means for the reintegration of offenders into the community. However, the board always keeps in mind the protection of society. To ensure this protection, all parolees are subject to conditions that, when violated, can entail a return to prison.

The board has spent much effort and energy to adapt to the legislative amendments passed by Parliament in 1977-78. The Criminal Law Amendment Act, 1977, altered both the Parole Act and the Penitentiary Act. The board now assumes responsibility for all unescorted temporary absences given to penitentiary inmates. Regulations were introduced to safeguard inmates' rights, by providing them with reasons for negative decisions, information on the content of their file, post-suspension hearings, and internal review. The amendments provided for the appointment of over 100 regional community board members and the creation of provincial parole boards in every province.

During the fiscal year 1977-78 the board received 7,698 applications for full parole. There were 3,068 full paroles granted: 1,539 to federal inmates and 1,529 to provincial inmates. Including those paroled in previous years, a total of 6,056 inmates were at liberty during this period. The board received 3,702 day parole applications; of these, 2,287 were granted. At the beginning of 1977-78 there were 1,812 persons on mandatory supervision and 2,770 more were released during the period.

The parole board has also responsibility, under the Criminal Records Act, for recommending to the Governor-in-Council whether a pardon should be granted. There were 5,194 applications for pardon during the fiscal year 1977-78, and 3,368 granted.

Sources

- 2.1 - 2.6 Advisory and Research Services Section, Public Law Branch, Department of Justice.
- 2.7 Justice Statistics Division, Social Statistics Field, Statistics Canada; Royal Canadian Mounted Police; Ontario Provincial Police; Quebec Police Force.
- 2.8 - 2.9 Justice Statistics Division, Social Statistics Field, Statistics Canada.
- 2.9.1 Canadian Penitentiary Service.
- 2.9.2 National Parole Board.

Tables

..	not available	e	estimate
...	not appropriate or not applicable	p	preliminary
—	nil or zero	r	revised
--	too small to be expressed	certain tables may not add due to rounding	

2.1 Provinces and territories of Canada, dates of admission to Confederation, legislative processes by which admission was effected, present area and seat of government

Province, territory or district	Date of admission or creation	Legislative process	Present area km²	Seat of provincial or territorial government
Ontario ¹	July 1, 1867	Act of Imperial Parliament — The British North America Act, 1867 (Br. Stat. 1867, c. 3) and Imperial Order in Council, May 22, 1867	1 068 582	Toronto
Quebec ¹	July 1, 1867		1 540 680	Quebec
Nova Scotia	July 1, 1867		55 491	Halifax
New Brunswick	July 1, 1867		73 437	Fredricton
Manitoba ²	July 15, 1870	Manitoba Act, 1870 (SC 1870, c. 3) and Imperial Order in Council, June 23, 1870	650 087	Winnipeg
British Columbia	July 20, 1871	Imperial Order in Council, May 16, 1871	948 596	Victoria
Prince Edward Island	July 1, 1873	Imperial Order in Council, June 26, 1873	5 657	Charlottetown
Saskatchewan ⁴	Sept. 1, 1905	Saskatchewan Act, 1905 (SC 1905, c. 42)	651 900	Regina
Alberta ⁴	Sept. 1, 1905	Alberta Act, 1905 (SC 1905, c. 3)	661 185	Edmonton
Newfoundland	Mar. 31, 1949	The British North America Act, 1949 (Br. Stat. 1949, c. 22)	404 517	St. John's
Northwest Territories ⁵	July 15, 1870	Act of Imperial Parliament — Rupert's Land Act, 1868 (Br. Stat. 1868, c. 105) and Imperial Order in Council, June 23, 1870	3 379 683	Yellowknife
Mackenzie ⁶	Jan. 1, 1920	Order in Council, Mar. 16, 1918	1 366 193	
Keewatin ⁶	Jan. 1, 1920		590 931	
Franklin ⁶	Jan. 1, 1920		1 422 559	
Yukon Territory ⁷	June 13, 1898	Yukon Territory Act, 1898 (SC 1898, c. 6)	482 515 ^a	Whitehorse
Canada			9 922 330 ^a	

¹The area of Ontario was extended by the Ontario Boundaries Extension Act, 1912 (SC 1912, c. 40).

²Extended by Quebec Boundaries Extension Act, 1912 (SC 1912, c. 45).

³Extended by the Extension of Boundaries Act of Manitoba, 1881 and the Manitoba Boundaries Extension Act, 1912 (SC 1912, c. 32).

⁴Saskatchewan and Alberta created as provinces in 1905 from the area formerly comprised in the provisional districts of Assiniboia, Athabaska, Alberta and Saskatchewan established May 17, 1882 by minute of Canadian Privy Council concurred in by Dominion Parliament and Order in Council, Oct. 2, 1895.

⁵By an Imperial Order in Council passed on June 23, 1870 pursuant to the Rupert's Land Act, 1868 (Br. Stat. 1868, c. 105), the former territories of the Hudson's Bay Company known as Rupert's Land and the North-Western Territory were transferred to Canada effective July 15, 1870. These territories were designated as the North-West Territories by the Act of SC 1869, c. 3, and as the Northwest Territories by RSC 1906, c. 62. By Imperial Order in Council of July 31, 1880 (effective Sept. 1, 1880), all British territories and possessions in North America not already included within Canada and all islands adjacent thereto (with the exception of the Colony of Newfoundland and its dependencies) were annexed to Canada and these additional territories were formally included in the North-West Territories by SC 1905, c. 27. The province of Manitoba was formed out of a portion of the territories by the Manitoba Act, 1870 (SC 1870, c. 3) and a further portion was added to Manitoba in 1881 by SC 1881, c. 14. The provinces of Alberta and Saskatchewan were formed out of portions of the territories in 1905 and in 1912 other portions were added to Manitoba, Ontario and Quebec.

⁶By SC 1876, c. 21, a separate district to be known as the District of Keewatin was established and provision was made for the local government thereof. The Act was expressed to come into force by proclamation. It provided that portions of the District might be re-annexed to the North-West Territories by proclamation; in 1886 a portion of the District of Keewatin was re-annexed and in 1905 the entire Keewatin District was re-annexed. The Act of 1876 was never proclaimed. By Order in Council of May 8, 1882 the provisional districts of Assiniboia, Saskatchewan, Alberta and Athabaska were created for the convenience of settlers and for postal purposes. By Order in Council of Oct. 2, 1895 the further provisional districts of Ungava, Franklin, Mackenzie and Yukon were created. The boundaries of these provisional districts were re-defined by Order in Council of Dec. 18, 1897. Subsequently the Yukon Territory was formed, the provinces of Alberta and Saskatchewan were created and other portions of the territories were annexed to Quebec, Ontario and Manitoba. By Order in Council dated Mar. 16, 1918 (effective Jan. 1, 1920) the remaining portions of the Northwest Territories were divided into three provisional districts known as Mackenzie, Keewatin and Franklin.

⁷The provisional district of Yukon established in 1895 was created a judicial district of the North-West Territories by proclamation issued pursuant to Sect. 51 of the North-West Territories Act (RSC 1886, c. 50) on Aug. 16, 1897 and, by the Yukon Territory Act (SC 1898, c. 6), was declared to be a separate territory.

^aRecalculated figures 1977.

2.2 Police personnel, actual strength, 1976 and 1977

Force	1976				1977			
	Police	Cadets	Other full-time employees	Total	Police	Cadets	Other full-time employees	Total
Royal Canadian Mounted Police	14,012	—	4,650	18,662	13,955	—	4,283	18,238
Ontario Provincial Police	4,064	—	1,169	5,233	4,060	—	1,157	5,217
Quebec Police Force	4,194	1	975	5,170	4,360	—	1,005	5,365
Municipal Police (excl. RCMP and OPP contracts)	28,372	542	4,498	33,412	28,947	544	5,554	35,045
Canadian National Railways Police	432	—	25	457	423	—	25	448
Canadian Pacific Railway Company Police	318	—	89	407	322	—	88	410
National Harbours Board Police	237	—	97	334	236	—	78	314
Total	51,629	543	11,503	63,675	52,303	544	12,190	65,037

2.3 Crime statistics, by type of offence, 1976 and 1977 (based on Uniform Crime Reporting Program)

Year and offence	Actual offences ¹	Offences cleared		Persons charged			
		By charge	Other-wise	Adults		Juveniles	
				Male	Female	Male	Female
1976							
Criminal code	1,637,704	354,984	220,389	254,380	43,250	61,862	9,258
Murder, first and second degree	615	450	65	415	63	21	5
Attempted murder	692	531	36	479	55	34	4
Manslaughter	48	43	2	44	9	2	—
Rape	1,828	823	321	876	1	65	—
Other sexual offences	8,783	3,118	1,779	2,593	36	356	7
Wounding	1,989	995	431	802	161	61	7
Assaults (not indecent)	102,925	32,996	47,032	30,028	3,001	1,563	361
Robbery	200,050	5,636	775	5,402	409	1,242	96
Breaking and entering	268,332	45,174	18,517	32,796	1,305	21,944	1,185
Theft, motor vehicle	87,627	16,090	6,477	11,313	466	7,308	323
Theft over \$200	105,381	9,231	5,526	7,735	1,092	2,059	182
Theft \$200 or under	497,662	74,616	52,165	41,790	19,734	15,849	5,524
Having stolen goods	17,686	15,603	1,534	9,838	1,214	1,816	296
Fraud	86,264	40,570	13,143	18,573	4,727	529	236
Prostitution	2,841	2,702	20	901	2,038	16	50
Gaming and betting	3,753	3,457	109	3,249	155	8	1
Offensive weapons	13,512	8,781	2,410	7,109	395	656	44
Other criminal code ¹	417,711	94,164	70,077	80,437	8,385	8,333	937
Federal statutes ²	50,497	34,323	9,572	20,768	2,115	1,499	358
Narcotic Control Act	59,738	49,182	5,862	45,862	4,939	2,177	554
Controlled drugs under the Food and Drugs Act	3,178	2,269	373	1,933	308	62	22
Provincial statutes ¹	367,482	250,847	103,194	231,870	16,000	7,727	4,331
Municipal bylaws ¹	64,178	27,207	20,416	22,756	3,524	949	74
1977							
Criminal code	1,654,020	364,991	219,018	265,677	44,108	60,660	8,893
Murder, first and second degree	624	472	48	448	56	31	7
Attempted murder	684	547	26	471	60	22	7
Manslaughter	78	72	2	44	10	2	—
Rape	1,886	825	302	929	2	59	—
Other sexual offences	9,046	3,427	1,835	2,677	33	360	8
Wounding	2,070	1,069	446	857	193	70	18
Assaults (not indecent)	101,861	34,244	46,482	30,686	3,147	1,643	387
Robbery	19,491	5,740	731	5,664	401	1,409	132
Breaking and entering	270,659	45,926	18,718	33,638	1,397	21,836	1,098
Theft, motor vehicle	84,252	15,817	6,724	11,418	570	7,181	364
Theft over \$200	114,000	9,584	5,559	8,289	1,092	2,038	213
Theft \$200 or under	486,821	70,879	47,822	40,657	18,655	14,613	4,878
Having stolen goods	18,433	16,338	1,402	10,096	1,284	1,935	301
Fraud	85,523	41,948	14,017	19,170	5,481	676	291
Prostitution	2,843	2,704	28	958	1,927	9	47
Gaming and betting	3,487	3,119	100	3,554	123	3	—
Offensive weapons	13,432	8,895	2,403	7,261	418	585	43
Other criminal code ¹	438,825	103,382	72,329	88,860	9,256	8,188	1,099
Federal statutes ²	65,782	46,481	13,173	26,253	2,496	1,283	414
Narcotic Control Act	63,131	51,484	6,361	48,043	5,095	2,217	448
Controlled drugs under the Food and Drugs Act	2,807	2,120	302	1,850	260	69	17
Provincial statutes ¹	379,588	272,047	96,182	247,778	18,212	8,440	4,141
Municipal bylaws ¹	61,273	27,470	17,185	23,000	3,689	929	106

¹Except traffic.²Except traffic, Narcotic Control Act and Food and Drugs Act.

Figures may not add due to rounding.

2.4 Traffic enforcement statistics, by type of offence, 1976 and 1977 (based on Uniform Crime Reporting Program)

Offence	Actual offences	Offences cleared		Persons charged	
		By charge	Otherwise	Male	Female
1976					
Criminal code	256,990	189,381	10,818	177,477	7,274
Criminal negligence					
Causing death	228	209	2	193	12
Causing bodily harm	139	135	3	109	4
Operating motor vehicle	784	758	11	678	18
Failing to stop or remain at scene of accident	74,945	11,453	8,396	9,900	885
Dangerous driving	6,599	5,973	315	5,515	137
Failure or refusal to provide breath sample	12,759	12,668	67	11,800	447
Driving while impaired	135,609	132,520	1,825	125,665	5,333
Driving while disqualified	25,927	25,665	199	23,617	438
Federal statutes (except parking)					14,734
Provincial statutes (except parking)					2,674,074
Municipal bylaws (except parking)					357,940
Provincial statutes ¹	123,886	67,873	12,707	61,571	6,051
Failing to stop or remain at scene of accident	43,199	11,053	4,082	9,723	1,056
Dangerous driving	69,286	53,572	8,555	48,828	4,933
Driving while disqualified	11,401	3,248	70	3,020	62

2.4 Traffic enforcement statistics, by type of offence, 1976 and 1977 (based on Uniform Crime Reporting Program) (concluded)

Offence	Actual offences	Offences cleared		Persons charged	
		By charge	Otherwise	Male	Female
1977					
Criminal code	266,972	198,156	13,136	183,882	8,647
Criminal negligence					
Causing death	256	248	3	217	26
Causing bodily harm	165	148	2	141	5
Operating motor vehicle	848	787	10	671	26
Failing to stop or remain at scene of accident	75,236	11,992	9,801	10,098	1,013
Dangerous driving	7,347	6,750	251	6,173	185
Failure or refusal to provide breath sample	14,300	13,999	142	12,159	528
Driving while impaired	140,731	137,440	2,171	129,770	6,367
Driving while disqualified	28,089	26,792	756	24,653	497
Federal statutes (except parking)				17,429	
Provincial statutes (except parking)				2,789,894	
Municipal bylaws (except parking)				393,122	
Provincial statutes ¹	118,161	56,360	14,534	51,920	5,284
Failing to stop or remain at scene of accident	46,436	13,008	4,101	11,504	1,328
Dangerous driving	56,590	38,924	10,309	36,188	3,861
Driving while disqualified	15,135	4,428	124	4,228	95

¹Provincial traffic offences almost identical to those under the criminal code.

2.5 Persons charged and persons convicted of indictable offences, with ratio per 100,000 population 16 years of age and over, by province and total, 1972 and 1973

Province or territory	Persons charged		Persons convicted				Persons convicted per 100,000 population 16 years of age and over	
	1972	1973	1972	%	1973	%	1972	1973
	No.	No.	No.		No.		No.	No.
Newfoundland	946	615	877	92.7	527	85.7	269	158
Prince Edward Island	14	42	13	92.9	33	78.6	17	42
Nova Scotia	2,541	2,213	2,260	88.9	1,891	85.4	417	342
New Brunswick	1,985	1,093	1,803	90.3	993	90.9	422	226
Ontario	29,634	30,470	23,985	80.9	23,408	76.8	437	417
Manitoba	4,588	4,745	3,416	74.5	2,789	58.8	495	395
Saskatchewan	3,933	3,258	3,541	90.0	2,225	68.3	565	354
British Columbia	11,426	11,010	9,309	81.5	8,491	77.1	585	514
Yukon and Northwest Territories	474	518	410	86.5	404	78.0	1,277	1,213
Total ¹	55,541	53,964	45,614	82.1	40,761	75.5	466	406

¹Excludes Quebec and Alberta.

2.6 Persons charged and convicted of indictable offences, by class of offence, 1972 and 1973

Class of offence	1972			1973		
	Persons charged	Persons convicted		Persons charged	Persons convicted	
		Male	Female		Male	Female
Criminal code						
Class I. Offences against the person	6,526	4,693	316	5,097	3,348	237
Class II. Offences against property with violence	7,740	6,665	162	7,556	6,296	202
Class III. Offences against property without violence	29,483	18,719	5,900	30,884	17,261	5,495
Class IV. Malicious offences against property	1,711	1,310	102	1,236	863	52
Class V. Forgery and other offences relating to currency	1,273	903	236	1,142	798	193
Class VI. Other offences	4,356	3,288	286	4,446	3,173	303
Total, criminal code	51,089	35,578	7,002	50,361	31,739	6,482
Federal statutes	4,452	2,753	281	3,603	2,316	224
Total ¹	55,541	38,331	7,283	53,964	34,055	6,706

¹Excludes Quebec and Alberta.

2.7 Court sentences given for indictable offences, by province, 1972 and 1973

Year and sentence	Nfld.	PEI	NS	NB	Ont.	Man.	Sask.	BC	YT and NWT	Canada ¹
1972										
Option of fine	324	—	877	573	8,573	837	817	3,067	94	15,162
Jail										
Under one year	176	5	501	451	5,147	694	981	2,794	138	10,887
One year and over	35	—	34	101	949	228	193	546	43	2,129
Reformatory and training school	—	—	2	1	1,038	—	—	—	—	1,041
Penitentiary										
Under two years	2	—	2	1	8	2	—	4	—	19
Two years and under five	21	1	149	91	526	159	80	253	8	1,288
Five years and under ten	2	—	12	13	150	27	16	93	2	315
Ten years and under fourteen	—	—	7	2	30	7	2	35	—	83
Fourteen years and over	—	—	—	3	2	6	—	10	—	21
Life	2	—	7	—	29	3	6	21	—	68
Preventive	—	—	—	—	1	—	—	3	—	4
Death	—	—	—	—	—	—	—	1	—	1
Suspended sentence without probation	19	—	40	249	1,428	793	519	387	14	3,449
Suspended sentence with probation	296	7	629	318	6,104	660	927	2,095	111	11,147
Total	877	13	2,260	1,803	23,985	3,416	3,541	9,309	410	45,614
1973										
Option of fine	137	3	730	324	8,559	810	343	2,957	120	13,983
Jail										
Under one year	209	10	453	264	5,049	714	749	2,414	146	10,008
One year and over	17	2	62	56	1,038	182	181	524	24	2,086
Reformatory and training school	—	—	4	—	1,007	—	—	—	—	1,011
Penitentiary										
Under two years	—	—	—	—	5	—	1	1	—	7
Two years and under five	10	6	141	61	582	125	39	294	9	1,267
Five years and under ten	—	—	10	3	154	19	19	99	1	305
Ten years and under fourteen	—	—	1	2	30	3	1	29	—	66
Fourteen years and over	—	—	—	1	13	1	—	15	—	30
Life	—	—	2	1	19	1	4	13	—	40
Preventive	—	—	—	—	2	—	—	1	—	3
Death	—	—	—	—	1	—	—	—	—	1
Suspended sentence without probation	81	3	40	93	1,094	320	311	396	17	2,355
Suspended sentence with probation	73	9	448	188	5,855	614	577	1,748	87	9,599
Total	527	33	1,891	993	23,408	2,789	2,225	8,491	404	40,761

¹Excludes Quebec and Alberta.**2.8 Method of trial of persons charged with indictable offences, showing disposition of cases, by province and total, 1973**

Method of trial	Nfld.	PEI	NS	NB	Ont.	Man.	Sask.	BC	YT and NWT	Canada ¹
By judge and jury										
Convicted	1	—	19	8	492	28	56	159	2	765
Acquitted	—	—	6	2	202	8	14	61	2	295
Detained because of insanity	—	—	—	—	14	—	—	5	—	19
Disagreement of jury	—	—	—	—	5	—	2	4	—	11
Stay of proceedings	—	—	1	1	12	3	12	18	—	47
No bill	—	—	—	—	59	—	—	—	—	59
Conditional discharge	—	—	—	—	6	2	—	—	—	8
Absolute discharge	—	—	1	—	—	—	4	2	—	7
By a judge without jury										
Convicted	3	3	124	10	1,448	49	207	249	8	2,101
Acquitted	—	1	30	2	424	6	47	64	3	577
Detained because of insanity	—	—	—	1	3	—	—	—	—	4
Disagreement of jury	—	—	—	—	—	—	—	—	—	—
Stay of proceedings	—	—	—	—	18	3	21	36	—	78
No bill	—	—	—	—	—	—	—	—	—	—
Conditional discharge	1	—	1	—	60	1	29	5	—	97
Absolute discharge	—	—	—	1	16	—	10	5	—	32

2.8 Method of trial of persons charged with indictable offences, showing disposition of cases, by province and total, 1973 (concluded)

Method of trial	Nfld.	PEI	NS	NB	Ont.	Man.	Sask.	BC	YT and NWT	Canada ¹
By a magistrate with consent										
Convicted	266	21	881	508	11,336	1,597	1,239	4,154	249	20,251
Acquitted	3	—	47	24	1,151	75	50	505	10	1,865
Detained because of insanity	1	—	1	—	6	—	1	9	—	18
Disagreement of jury	—	—	—	—	1	—	—	—	—	1
Stay of proceedings	—	—	1	5	41	463	20	617	36	1,183
No bill	—	—	—	—	—	—	—	—	—	—
Conditional discharge	21	3	39	11	749	307	291	140	8	1,569
Absolute discharge	4	2	24	2	279	99	142	29	4	585
By a magistrate, absolute jurisdiction										
Convicted	257	9	867	467	10,132	1,115	723	3,929	145	17,644
Acquitted	7	—	52	14	1,306	59	72	413	11	1,934
Detained because of insanity	1	—	1	1	1	1	—	3	—	8
Disagreement of jury	—	—	—	—	1	—	—	—	—	1
Stay of proceedings	1	—	—	2	10	266	—	226	22	527
No bill	—	—	—	—	—	—	—	—	—	—
Conditional discharge	40	2	59	11	1,751	391	249	269	12	2,784
Absolute discharge	9	1	59	23	947	272	69	108	6	1,494
Total, persons charged	615	42	2,213	1,093	30,470	4,745	3,258	11,010	518	53,964
Total, persons convicted	527	33	1,891	993	23,408	2,789	2,225	8,491	404	40,761

¹Excludes Quebec and Alberta.

2.9 Convictions for summary conviction offences¹, by type, 1972 and 1973

Type of offence	1972	1973
CRIMINAL CODE	104,825	107,688
Assault with intent	..	534
Attempt to commit suicide	21	a
Attempts, conspiracies, accessories, counselling	134	92
Bawdy house	126	137
Being at large and failing to appear	..	3,225
Causing disturbance by being drunk	1,724	1,982
Common assault	7,965	7,126
Communicating venereal disease	28	2
Contempt of court	32	69
Corrupting morals	253	313
Cruelty to animals	48	46
Damage not exceeding \$50 and other interference with property	3,113	2,422
Disclosure of jury proceedings	..	5
Disorderly conduct	8,705	8,021
Duty of persons to provide necessities	74	115
Duty to safeguard dangerous places	2	—
Failing to comply with order	..	218
Fraudulently obtaining food or lodging	715	727
Fraudulently obtaining transportation	154	134
Gaming, betting, lotteries	556	407
Intimidation	151	189
Killing or injuring bird or animal other than cattle	46	49
Mischief in relation to private property	..	878
Mischief in relation to property endangering life	..	158
Mischief in relation to public property	..	442
Motor vehicle		
Criminal negligence in operation	252	325
Dangerous driving	2,035	1,967
Dangerous operation of vessel	135	144
Driving while impaired	25,392	26,026
Driving while disqualified	5,640	5,992
Driving with more than 80 mg in blood	27,502	26,893
Failing to stop at scene of accident	3,346	3,286
Failure or refusal to provide breath sample	5,801	5,781
Motor vehicle equipped with smoke screen	70	63
Taking motor vehicle without consent	1,506	1,218
Offences relating to public or police officer	..	782
Offensive weapons	1,202	1,020
Personating peace officer	101	36
Public mischief	..	282
Recognizance, breach of	2,938	2,551
Sample of breath (vessel)	..	6
Soliciting	..	744
Vagrancy	883	5
Other criminal code	4,175	3,276

2.9 Convictions for summary conviction offences¹, by type, 1972 and 1973 (concluded)

Type of offence	1972	1973
FEDERAL STATUTES	28,849	38,228
Customs	63	618
Excise	421	434
Fisheries	952	786
Food and drugs	2,932	1,871
Harbour board and merchant seamen's	193	506
Immigration	352	370
Income tax	8,957	7,698
Indian		
Intoxication	201	143
Other	236	194
Juvenile delinquents		
Adults who contribute to delinquency	474	738
Inducing child to leave home	20	174
Sexual immorality	142	57
Other	..	1,087
Lord's day	343	188
Narcotic Control Act	..	8,823
National defence	255	29
Railway	562	198
Unemployment insurance	1,805	1,938
Weights and measures	248	146
Other federal statutes	10,693	12,230
PROVINCIAL STATUTES	1,281,582	1,151,535
Children of unmarried parents	1,104	1,157
Child welfare (Protection Act)		
Maintenance	..	553
Cruelty	..	88
Wardship	..	4,591
Deserted wives and children's maintenance	10,762	9,557
Game and fisheries	7,026	5,660
Highway traffic		
Driving without due care and attention	49,027	36,347
Other traffic (excludes parking)	1,046,581	937,910
Liquor control	125,862	125,910
Master and servant	435	380
Medical, dentistry and pharmacy	62	115
Mental diseases	120	247
Prairie and forest fire prevention	48	269
Protection of children	4,989	1,023
Public health	523	222
School laws	209	475
Other provincial statutes	34,834	27,031
MUNICIPAL BYLAWS	102,206	86,566
Intoxication	522	971
Traffic	75,088	62,598
Other	26,596	22,997
Total convictions	1,517,462	1,384,017

¹Excludes Quebec, Alberta and Yukon Territory, in 1972, and Quebec and Alberta in 1973.²Attempted suicide not a criminal offence after July 1972.**2.10 Delinquencies by number and type of offence, 1974-77**

Delinquency	1974	1975	1976	1977
Criminal code	60,427	69,555	76,189	74,897
Offensive weapons	434	634	745	694
Sexual offences	257	307	349	374
Disorderly conduct	690	969	785	734
Murder	4	24	12	16
Murder, attempted	12	10	12	12
Manslaughter	10	7	6	4
Common assault	1,348	1,630	1,806	1,813
Theft over \$200	3,157	5,416	6,868	5,207
Theft under \$200	6,538	12,704	17,934	13,501
Theft, auto	1,472	1,574	1,613	1,609
Theft, other	12,176	5,691	2,335	4,989
Robbery	733	1,140	1,152	1,218
Break and enter	17,975	22,351	23,950	23,622
Possession of stolen goods	4,189	5,117	5,722	7,816
Forgery and similar crimes	676	992	831	974
Fraud	277	430	376	518
Mischief	5,834	5,856	6,646	6,676
Arson and other fires ¹	402	382	498	430
Other criminal code offences	4,243	4,321	4,549	4,690
Various other delinquencies²	16,031	16,961	17,789	18,915
Total	76,458	86,516	93,978	93,812

¹Includes false alarm of fire.²Includes federal, provincial and municipal statute violations.

2.11 Court decisions for juvenile delinquents, by province, 1975-77

Province or territory	1975		1976		1977	
	Found delinquent	Not found delinquent	Found delinquent	Not found delinquent	Found delinquent	Not found delinquent
Newfoundland	393	21	648	114	918	88
New Brunswick	701	63	782	84	751	104
Quebec	12,508	4,842	13,342	5,211	13,212	3,516
Ontario	12,769	3,857	11,152	4,727	9,941	3,979
Manitoba	2,872	1,276	3,091	1,208	2,695	1,220
Saskatchewan	743	95	856	51	782	27
Alberta	4,274	513	5,818	660	6,213	637
Yukon	109	8	107	8	91	7
Total	34,369	10,675	35,796	12,063	34,603	9,578

2.12 Population in penitentiaries and in provincial adult institutions, years ended Dec. 31, 1975-77

Year and type of institution	In custody at beginning of year	Movement in	Movement out	In custody at end of year	% change
1975					
Penitentiaries	8,357	13,982	13,756	8,583	+2.7
Provincial adult institutions	9,953	177,515	176,059	11,409	+14.6
1976					
Penitentiaries	8,706	15,508	14,929	9,285	+6.7
Provincial adult institutions	11,277	183,882	182,864	13,071 ¹	+15.9
1977					
Penitentiaries	9,267	16,232	16,164	9,335	+0.7
Provincial adult institutions					

¹Four institutions opened in 1976 had 776 inmates on December 31, 1976.

2.13 Penitentiary admissions, by offence, 1975-77

Offence	1975		1976		1977 ¹	
	No.	% of total	No.	% of total	No.	% of total
Murder	276	6.4	251	5.5	288	6.2
Attempted murder	—	—	33	0.7	33	0.7
Rape	147	3.4	152	3.3	146	3.2
Other sexual offences	81	1.9	95	2.1	81	1.7
Kidnapping and abduction	36	0.8	33	0.7	43	0.9
Criminal negligence	18	0.4	17	0.4	12	0.3
Wounding	46	1.1	50	1.1	79	1.7
Assault	103	2.4	123	2.7	93	2.0
Robbery	993	23.0	984	21.7	1,040	22.5
Breaking and entering	836	19.4	782	17.2	846	18.3
Prison breach	85	2.0	53	1.2	37	0.8
Theft	274	6.3	246	5.4	203	4.4
Possession of stolen goods	181	4.2	162	3.6	144	3.1
Frauds	230	5.3	—	—	—	—
Frauds, offences against rights of property	—	—	144	3.2	93	2.0
Frauds, fraudulent transactions relating to contracts and trade	—	—	85	1.9	90	1.9
Offensive weapons	67	1.6	63	1.4	55	1.2
Habitual criminal	3	—	—	—	—	—
Dangerous sexual offender	4	—	3	—	1	—
Other criminal code	158	3.7	143	3.1	190	4.1
Narcotic Control Act	334	7.7	465	10.2	451	9.7
Parole violators	127	2.9	119	2.6	127	2.7
Mandatory supervision revocation	278	6.4	486	10.7	539	11.6
Other federal statutes	40	0.9	52	1.1	37	0.8
Provincial statutes	—	—	—	—	1	—
Total	4,317	99.8	4,541	99.8	4,629	99.8

Sources

- 2.1 Advisory and Research Services Section, Public Law Branch, Department of Justice.
 2.2 - 2.13 Justice Statistics Division, Social Statistics Field, Statistics Canada.

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Organization of the federal government

3.1

In most countries the legal framework within which political processes take place is provided through a constitution. The written constitution of Canada is embodied in the British North America acts. The first of these acts, passed by the British Parliament in 1867, not only established the institutions through which legislative, executive and judicial powers are exercised in Canada but also established a federal form of government. A central government — the federal government — has legislative jurisdiction primarily over matters of national concern and over those matters not assigned to the provinces. The 10 provincial governments are assigned specific areas of legislative jurisdiction, including municipal institutions.

Much of the actual structure and functioning of the government is not, however, contained in the written constitution, but rather forms a part of the convention of government. This is reflected in the phrase in the preamble to the British North America Act of 1867 which states that Canada will have a constitution similar in principle to that of the United Kingdom.

In Canada there is a fusion of executive and legislative powers. Formal executive power is vested in the Queen, whose authority is delegated to the Governor General, her representative. Legislative power is vested in the Parliament of Canada which consists of the Queen, an appointed upper house (the Senate) and a lower house (the House of Commons) elected by universal adult suffrage. The independence of the judiciary is safeguarded through the constitutional provision that superior court judges are appointed by the Governor-in-Council, that is, by the Governor General on advice of the cabinet, and that they hold office during good behaviour and cannot be removed unless both houses of Parliament, the cabinet and the Governor General agree.

In the Canadian system, where the executive is part of Parliament, democratic principles could not be adhered to without the constitutional convention that the government is responsible to the House of Commons. When the government loses the confidence of the House of Commons, it must resign or the prime minister must ask the Governor General to dissolve Parliament and call a general election. Although there are conventions that help in deciding when the government has lost the confidence of the house, all doubt is removed when the government is defeated on a motion on which it had explicitly staked its life or when a motion of non-confidence in the government is passed. If the government resigns, the Governor General can call on the leader of the opposition (who is usually the leader of the political party that has the second largest number of seats in the House of Commons) to form a new government. If a government that has lost the confidence of the House of Commons and has been granted a dissolution is defeated in the ensuing general election and if no clear majority is elected, the government has two choices — it can remain in office and seek the confidence of the Commons when it meets or it can resign at once. If it resigns, the Governor General will normally ask the leader of another party, usually the one that has won the most seats, to form a new government. The primary responsibility of the Governor General in either circumstance is to provide the nation with a government capable of carrying on with the support of the House of Commons.

The prime minister and his cabinet are generally members of the House of Commons, although some may be senators. They are, formally speaking, the Queen's advisers. In fact virtually no significant actions can be taken by the Queen or her representative in Canada, the Governor General, without cabinet advice. The prime minister and his cabinet determine executive policies and are responsible for them to the House of Commons. The Queen and the Governor General have the traditional rights to be consulted, to encourage and to warn the government.

The needs and wishes of citizens are conveyed primarily to members of Parliament, directly to cabinet ministers or indirectly to cabinet ministers. Requests for government

action may originate from individuals, political parties or pressure groups; members of Parliament, cabinet ministers and public servants may take the initiative in suggesting the adoption of policies and programs in the public interest. Although the roles of Parliament, the public service and the cabinet cannot be defined precisely, the following description deals with the obvious and primary roles of each.

Determination of public policy rests with the cabinet but begins generally with the formulation of policy by individual ministers. Working in co-operation with public servants, a minister formulates policy proposals for consideration by his colleagues in the cabinet. The cabinet chooses those policies it wishes to implement, may itself formulate policies, or may select a policy from among the alternatives submitted. A cabinet committee system which covers all aspects of modern government enhances the capacity of cabinet in policy determination, priority setting, and expenditure allocation, management and control.

Conforming with the principle of the rule of law, all executive acts must be authorized by law, and laws are enacted by Parliament. Executive acts may be carried out under a statute which specifies how a policy is to be implemented, or by means of an order-in-council under a statute which authorizes the Governor-in-Council to undertake specific acts. Much of the activity of the public service is authorized through yearly appropriation acts approving the expenditure of public funds for specific purposes. Apart from the appropriation of funds, Parliament is concerned with discussion and authorization of policy submitted for its approval by the government. Approval of policies is mainly through the enactment of legislation. The rules of procedure are included in the standing orders of the House of Commons.

A significant feature of the parliamentary process is that cabinet ministers have seats in Parliament and thus share in the exercise of legislative power. The majority of legislation enacted by Parliament is submitted by the government; the British North America Act (BNA) provides that all financial measures must originate in the Commons.

The judiciary applies the laws enacted by Parliament. Because Parliament is supreme in the Canadian government, the judiciary must apply the law as Parliament has enacted it, unless a law is declared to be unconstitutional, or not within the legislative jurisdiction of Parliament or of the legislature that enacted it.

Administration of legislation and of government policies is carried out through a public service comprising employees organized in a number of departments and ministries of government and a large number of special boards, commissions and Crown corporations and other agencies. Legislation and tradition have developed a non-partisan public service; employee tenure is unaffected by changes in government. The only direct contact public servants have with Parliament occurs when they are called as witnesses before parliamentary committees; they do not, by convention, express opinions on public policy but usually appear as experts and to explain existing policy. Public servants who head agencies such as the Public Service Commission, the office of the auditor general, the office of the commissioner of official languages, the Library of Parliament or the office of the chief electoral officer are responsible directly to Parliament. They are not subject to direction by the government on matters of policy and may appear before parliamentary committees to explain the policies of their agencies.

Growth in number, variety and complexity of the demands placed on the government requires it not only to adjust its policies but to make changes in the organization of the public service so that required policies can be implemented. Major reorganization of the public service was authorized by a series of government organization acts in 1966, 1969, 1970 and 1976.

3.2 The executive

3.2.1 The Crown

The BNA Act of 1867 (Sect. 9) provides that the executive government and authority of and over Canada is vested in the Queen. The functions of the Crown (that is, the formal

executive represented by the Queen), substantially the same as those of the Crown in relation to the British government, are discharged in Canada by the Governor General.

The Sovereign. Since Confederation Canada has had six sovereigns: Victoria, Edward VII, George V, Edward VIII, George VI and Elizabeth II. The present sovereign is not only Queen of Canada but is also head of state of other countries in the Commonwealth as well as being the formal head of the Commonwealth. Her title for Canada was approved by Parliament and established by a royal proclamation on May 28, 1953: Elizabeth the Second, by the grace of God of the United Kingdom, Canada and her other realms and territories, Queen, Head of the Commonwealth, Defender of the Faith.

From time to time the Queen personally discharges the functions of the Crown in Canada, such as the appointment of the Governor General, which Her Majesty does on the recommendation of the prime minister of Canada. During a royal visit, the Queen may participate in ceremonies normally carried out in her name by the Governor General, such as the opening of Parliament or the granting of a general amnesty.

The Governor General is the representative of the Crown in Canada. The Right Honourable Edward Schreyer, the 22nd Governor General since Confederation, was appointed by Queen Elizabeth on December 7, 1978 and took office on January 21, 1979. Constitutionally, the Queen of Canada is the Canadian head of state but the Governor General fulfils her role on her behalf. The letters patent revised and issued under the Great Seal of Canada on October 1, 1947 authorized and empowered the Governor General, on the advice of his Canadian ministers to exercise all powers and authorities lawfully belonging to the Sovereign in respect of Canada.

Following are the Governors General of Canada since Confederation, with dates of assumption of office:

The Viscount Monck of Ballytramon, July 1, 1867
 The Baron Lisgar of Lisgar and Bailieborough, February 2, 1869
 The Earl of Dufferin, June 25, 1872
 The Marquis of Lorne, November 25, 1878
 The Marquis of Lansdowne, October 23, 1883
 The Baron Stanley of Preston, June 11, 1888
 The Earl of Aberdeen, September 18, 1893
 The Earl of Minto, November 12, 1898
 The Earl Grey, December 10, 1904
 Field Marshal HRH The Duke of Connaught, October 13, 1911
 The Duke of Devonshire, November 11, 1916
 General The Baron Byng of Vimy, August 11, 1921
 The Viscount Willingdon of Ratton, October 2, 1926
 The Earl of Bessborough, April 4, 1931
 The Baron Tweedsmuir of Elsfield, November 2, 1935
 Major General The Earl of Athlone, June 21, 1940
 Field Marshal The Viscount Alexander of Tunis, April 12, 1946
 The Right Honourable Vincent Massey, February 28, 1952
 General The Right Honourable Georges P. Vanier, September 15, 1959
 The Right Honourable Roland Michener, April 17, 1967
 The Right Honourable Jules Léger, January 14, 1974
 The Right Honourable Edward Schreyer, January 21, 1979.

One of the most important responsibilities of the Governor General is to ensure that the country always has a government. If the office of the prime minister becomes vacant because of death or resignation, the Governor General must see that it is filled and that a new government is formed.

As the Queen's representative, the Governor General summons, prorogues and dissolves Parliament on the advice of the prime minister. He signs orders-in-council, commissions and other state documents, and gives his assent to bills that have been passed in both houses of Parliament and which thereby become acts of Parliament with the force of law. In virtually all cases he is bound by constitutional convention to carry out these duties in accordance with the advice of his responsible ministers. Should he

not wish to accept their advice, and should they maintain that advice, his only alternative is to replace the existing government with a new government but only if the principle of responsible government could be upheld. Thus the Governor General's discretion in choosing another government is strictly limited to a situation in which a person other than the existing prime minister could command the confidence of the House of Commons.

Canadian honours system. An exclusively Canadian honours system was introduced in 1967 with the establishment of the Order of Canada. The honours system was enlarged in 1972 with the addition of the Order of Military Merit and three decorations to be awarded in recognition of acts of bravery. A complete description of these awards and a list of the recipients during 1978 and 1979 are given in Appendix 4.

3.2.2 The Privy Council

The BNA Act of 1867 (Sect. 11) provides for a council to aid and advise in the Government of Canada, called the Queen's Privy Council for Canada. The council that in fact advises the Queen's representative, the Governor General, is the committee of the Privy Council whose membership is identical to that of the cabinet.

Membership in the Privy Council is for life and includes cabinet ministers of the government of the day, former cabinet ministers, the chief justice of Canada and former chief justices, occasionally members of the royal family, past and present Commonwealth prime ministers, premiers of provinces, former speakers of the Senate and the House of Commons of Canada and a few other distinguished persons. As a condition of office, all ministers must first be sworn into the Privy Council. A member is styled "Honourable" and may use the initials PC after his name. The Governor General, the chief justice of Canada and the prime minister of Canada automatically are given the title "Right Honourable" by royal warrant when they take office.

The Privy Council as a whole has met on only a few ceremonial occasions; its constitutional responsibilities to advise the Crown on government matters are discharged exclusively by the cabinet. The legal instruments through which executive authority is exercised are called orders-in-council. A number of ministers, acting as a committee of the Privy Council, make a submission to the Governor General for his approval which he is obliged to give in almost all circumstances; with this approval, the submission becomes an order-in-council.

The office of president of the Privy Council was formerly occupied, more often than not, by the prime minister; in recent years, it has been occupied by another minister who is usually also government leader in the House of Commons, with the broad responsibility of directing house business, including supervision of the government's replies to questions in the house and of parliamentary returns in general, and a special responsibility of ensuring that Parliament, through its operations and organization of business, can effectively function under the increasing pressure of modern government.

A list of members of the Privy Council of Canada is published in Appendix 8, Political update.

3.2.3 The prime minister

The prime minister is the leader of the political party requested by the Governor General to form the government, which almost always means the leader of the party with the strongest representation in the Commons. His position is one of exceptional authority stemming in part from the success of the party at an election. The prime minister chooses his cabinet. When a member of cabinet resigns, the remainder of the cabinet is undisturbed; when the prime minister vacates his office, this act normally carries with it the resignation of the cabinet.

Part of the prime minister's authority lies in his power to recommend dissolution of Parliament. This right, which in most circumstances permits him to precipitate an election, is a source of considerable power both in his dealings with colleagues and with the opposition parties in the house. The prime minister is also responsible for organization of the cabinet and its committees; for the organization and functions of his

own office, as well as the Privy Council office and the federal-provincial relations office; and for the allocation of responsibilities between ministers.

Another source of the prime minister's authority derives from the appointments which he recommends, including privy councillors, cabinet ministers, lieutenant-governors of the provinces, provincial administrators, speakers of the Senate, chief justices of all courts, senators and certain senior executives of the public service. The prime minister also recommends the appointment of a new Governor General to the Sovereign, although this normally follows consultation with the cabinet.

Following are the prime ministers since Confederation, with dates of administrations:

Rt. Hon. Sir John Alexander Macdonald, July 1, 1867 — November 5, 1873
 Hon. Alexander Mackenzie, November 7, 1873 — October 9, 1878
 Rt. Hon. Sir John Alexander Macdonald, October 17, 1878 — June 6, 1891
 Hon. Sir John Joseph Caldwell Abbott, June 16, 1891 — November 24, 1892
 Rt. Hon. Sir John Sparrow David Thompson, December 5, 1892 — December 12, 1894
 Hon. Sir Mackenzie Bowell, December 21, 1894 — April 27, 1896
 Rt. Hon. Sir Charles Tupper, May 1, 1896 — July 8, 1896
 Rt. Hon. Sir Wilfrid Laurier, July 11, 1896 — October 6, 1911
 Rt. Hon. Sir Robert Laird Borden, October 10, 1911 — October 12, 1917 (Conservative Administration)
 Rt. Hon. Sir Robert Laird Borden, October 12, 1917 — July 10, 1920 (Unionist Administration)
 Rt. Hon. Arthur Meighen, July 10, 1920 — December 29, 1921 (Unionist — National Liberal and Conservative Party)
 Rt. Hon. William Lyon Mackenzie King, December 29, 1921 — June 28, 1926
 Rt. Hon. Arthur Meighen, June 29, 1926 — September 25, 1926
 Rt. Hon. William Lyon Mackenzie King, September 25, 1926 — August 6, 1930
 Rt. Hon. Richard Bedford Bennett, August 7, 1930 — October 23, 1935
 Rt. Hon. William Lyon Mackenzie King, October 23, 1935 — November 15, 1948
 Rt. Hon. Louis Stephen St-Laurent, November 15, 1948 — June 21, 1957
 Rt. Hon. John George Diefenbaker, June 21, 1957 — April 22, 1963
 Rt. Hon. Lester Bowles Pearson, April 22, 1963 — April 20, 1968
 Rt. Hon. Pierre Elliott Trudeau, April 20, 1968 — June 4, 1979
 Rt. Hon. Joe Clark, June 4, 1979 — March 3, 1980
 Rt. Hon. Pierre Elliott Trudeau, March 3, 1980 — . . .

The cabinet

3.2.4

The cabinet's primary responsibility is to determine priorities among the demands expressed by the people and to define policies to meet those demands. The cabinet consists of all the ministers who are chosen by the prime minister, generally from among members of the House of Commons, although some cabinet ministers are usually chosen from the Senate including the leader of the government in the Senate. Ministers who are members of Parliament usually head government departments because the constitution provides that measures for appropriating public funds or imposing taxes must originate in the Commons. If a senator heads a department, another minister in the Commons has to speak on his behalf on its affairs.

Lists of members of the 20th, 21st and 22nd ministries are published in Appendix 8, Political update.

Each cabinet minister usually assumes responsibility for one of the departments of government, although a minister may hold more than one portfolio at the same time or he may hold one or more portfolios and one or more acting portfolios. A minister without portfolio may be invited to join the cabinet because the prime minister wishes to have him or her in the cabinet without the heavy duties of running a department, or to provide a suitable balance of regional representation, or for any other reason that the prime minister sees fit. Because of Canada's cultural and geographical diversity, the prime minister gives close attention to geographic representation in the cabinet.

With the enactment of the Ministries and Ministers of State Act (Government Organization Act, 1970), five categories of ministers of the Crown may be identified: departmental ministers, ministers with special parliamentary responsibilities, ministers

without portfolio, and two types of ministers of state. Ministers of state for designated purposes may head a ministry of state created by proclamation. They are charged with developing new and comprehensive policies in areas of particular urgency and importance and have a mandate determined by the Governor-in-Council. They may have powers, duties and functions and exercise supervision and control of elements of the public service, and may seek parliamentary appropriations to cover the cost of their staff and operations. Other ministers of state may be appointed to assist a departmental minister with his responsibilities. They may have powers, duties and functions delegated to them by the departmental minister, who retains ultimate legal responsibility. All ministers are appointed on the advice of the prime minister by commissions of office issued by the Governor General under the Great Seal of Canada, to serve and to be accountable to Parliament as members of the government and for any responsibility that might be assigned to them by law or otherwise.

In Canada, almost all executive acts of the government are carried out in the name of the Governor-in-Council. The cabinet, or a committee of ministers acting as a committee of the Privy Council makes submissions to the Governor General for approval, and he is bound by the constitution in nearly all circumstances to accept them. About 3,973 such orders-in-council were enacted in 1978 compared with 3,746 in 1977. Although some were routine and required little discussion in cabinet, others were of major significance and required extensive deliberation, sometimes covering months of meetings of officials, cabinet committees and the full cabinet.

The cabinet must consider and approve the policy underlying each piece of proposed legislation. After proposed legislation is drafted it must be examined in detail. Between 40 and 60 bills are normally considered by cabinet during a parliamentary session. Proposals for reform of large areas of government organization or administration, and policy to be adopted in fundamental constitutional changes or at a major international conference are among the issues which, on occasion, demand this extensive and detailed consideration.

The cabinet committee system. The nature and large volume of policy issues to be decided on by cabinet do not lend themselves to discussion by 30 or more ministers. Growing demands on the executive have stimulated delegation of some cabinet functions to its committees.

Cabinet committees provide a forum for thorough study of policy proposals, although the cabinet remains the prime focus of decision-making. Membership of cabinet committees is public but the same rules of secrecy that apply to cabinet deliberations apply to cabinet committees. The prime minister determines the establishment of cabinet committees, their membership and terms of reference. Ministers may invite one or two officials as advisers during cabinet committee meetings. The secretariats of the committees are provided by the Privy Council office and the secretary of a cabinet committee is usually also an assistant secretary to the cabinet. Treasury Board, which is a cabinet committee and a committee of the Privy Council established by statute, the economic development committee, and the social development committee, are exceptions; each has its own secretariat headed by a secretary who has the status of a deputy minister.

Under the direction of the prime minister, the secretary to the cabinet prepares agenda and refers memoranda to cabinet to the appropriate committee for study and report to the full cabinet. Except where the prime minister instructs otherwise, all memoranda to cabinet are submitted over the signature of the minister concerned.

The terms of reference of cabinet committees cover virtually the total area of government responsibility. All memoranda to cabinet are first considered by a cabinet committee, except when they are of exceptional urgency or when the prime minister directs otherwise, in which case an item may be considered immediately by the full cabinet.

In July 1980 there were four policy committees: economic development, social development, foreign and defence policy, and government operations. Three committees perform co-ordinating functions: priorities and planning, legislation and house planning, and the Treasury Board.

In addition special and ad hoc committees of the cabinet are established from time to time and meet as required: the cabinet committees on the public service, security and intelligence, labour relations and the special committee of council which considers many submissions to the Governor-in-Council.

Growing reliance on the cabinet committee system since World War II is evidence of its usefulness. The following is a brief outline of the involvement of cabinet and cabinet committees with a piece of legislation that the government ultimately introduces in the Commons or the Senate.

On the initiative of a minister a policy proposal is prepared, the implementation of which will require new legislation or the amendment of existing legislation. The proposal is addressed formally to cabinet, but is considered first by a subject-matter committee. If approved, the proposal goes forward as a recommendation for confirmation or consideration by cabinet. Proposals with financial implications are considered by the priorities and planning committee or by one of the four policy committees which are responsible for the government's expenditure management system. If the committee's

Cabinet committees provide a forum for thorough study of policy proposals. All memoranda to cabinet, including proposals for legislation, are considered by a cabinet committee first except when they are of unusual urgency or when the prime minister directs that they should be studied immediately by the whole cabinet.

decision is confirmed, the justice department is instructed to prepare a draft bill expressing in legal terms the intent of the policy proposal. When the draft bill has the minister's approval, he submits it to the cabinet committee on legislation and house planning and it is examined from a legal rather than a policy point of view. Once this committee agrees that the bill is acceptable in all respects, or with modifications, and could be introduced in Parliament, it reports this to cabinet. If cabinet confirmation is given, the prime minister initials the bill and it is then introduced either in the Senate or the House of Commons, depending on constitutional and political considerations.

The order and manner in which a bill is considered in Parliament is the responsibility of the president of the Privy Council and house leader who negotiates these matters with his counterparts in the opposition parties. If a bill is to be introduced in the Senate, the house leader will discuss questions such as timing and tactics with the leader of the government in the Senate, who in turn will negotiate consideration of the bill with the opposition leader in the Senate.

The Privy Council office is a secretariat providing staff support to the special committee of the Privy Council, to the cabinet and to the prime minister. For the purposes of the Financial Administration Act it is considered a government department. Since the prime minister is, in effect, chairman of the cabinet, he is the minister responsible for the Privy Council office. The work of the Privy Council office is directed by a public servant known as the clerk of the Privy Council and secretary to the cabinet. He is the senior member of the public service of Canada.

Parliamentary secretaries. The Parliamentary Secretaries Act of June 1959 provided for the appointment of 16 parliamentary secretaries from among the members of the Commons to assist ministers. That act was amended by the Government Organization Act, 1970, which allows the number of parliamentary secretaries to equal the number of ministers who hold offices listed in Section 4 of the Salaries Act, that is, ministers with departmental responsibilities, the prime minister, the leader of the government in the Senate and the president of the Privy Council. A parliamentary secretary works under direction of his minister, but has no legal authority in his association with the department, nor is he given acting responsibility or any of the powers, duties and functions of a minister in his minister's absence or incapacity. Parliamentary secretaries are appointed by the prime minister and hold office for 12 months.

3.3 The legislature

The federal legislative authority is vested in the Parliament of Canada — the Queen, the Senate and the House of Commons. Bills may originate in either the Senate or the House of Commons, subject to Section 53 of the BNA Act, 1867, which provides that bills for the appropriation of any part of the public revenue or the imposition of any tax or impost shall originate in the House of Commons. Bills must pass both houses and receive royal assent before becoming law. In practice, most public bills originate in the House of Commons although, at the request of the government, more have recently been introduced in the Senate in order that they may be dealt with there while the Commons is engaged in other matters such as the debate on the speech from the throne. Private bills may originate in either the House of Commons or the Senate. The Senate may delay, amend or even refuse to pass bills sent to it from the Commons, but differences are usually settled without serious conflict.

Section 91 of the BNA acts, 1867 to 1964, assigns to the Parliament of Canada legislative authority in very clearly specified areas. These are discussed in Chapter 2.

Under Section 95, the Parliament of Canada may make laws in relation to agriculture and immigration concurrently with provincial legislatures although federal legislation is paramount in any conflict. An amendment to the BNA Act in 1951 (Br. Stat. 1950-51, c.32) authorized the Parliament of Canada to make laws in relation to old age pensions subject to the proviso that no such law should affect the operation of any provincial laws in relation to such pensions. By the BNA Act, 1964 this amendment was extended to permit the payment of supplementary benefits, including survivors and disability benefits irrespective of age, under a contributory pension plan.

The law making process. If a bill is introduced and approved in the House of Commons, it is then introduced in the Senate and follows a similar procedure. If a bill is first introduced in the Senate, the reverse procedure is followed. There are three types of bills: public bills introduced by the government; public bills introduced by private members of Parliament; and private bills introduced by private members of Parliament. All bills must pass through various stages before they become law. These stages provide Parliament with opportunities to examine and consider all bills both in principle and in detail. Each type is treated in a slightly different manner, and there are even differences in procedure when the house deals with government bills introduced pursuant to supply and ways and means motions on the one hand, and other government bills on the other. The following outline describes the procedure for a government bill introduced in the House of Commons.

The sponsoring minister gives notice that he intends to introduce a bill on a given subject. Not less than 48 hours later he moves for leave to introduce the bill and that the bill be given first reading. This is normally granted automatically because this first step does not imply approval of any sort. It is only after first reading that the bill is ordered printed for distribution to the members.

At a later sitting the minister moves that the bill be given second reading and that it be referred to an appropriate committee of the House of Commons. A favourable vote on the motion for second reading represents approval of the bill in principle so there is often an extensive debate, which, according to the procedures of the Commons, must be confined to the principle of the bill. The debate culminates in a vote which, if favourable, results in the bill being referred to the appropriate committee of the house, where it is given clause-by-clause consideration.

At the committee stage, expert witnesses and interested parties may be invited to give testimony pertaining to the bill, and the proceedings may cover many weeks.

The house committee prepares and submits a report to the House of Commons which must decide whether to accept the report, including any amendments the committee has made to the bill. At the report stage any member may, on giving 24 hours notice, move an amendment to the bill. All such amendments are debated and are usually put to a vote. Following that, a motion "that the bill be concurred in" or "that the bill, as amended, be concurred in", is put to the vote.

After this report stage, the minister moves that the bill be given third reading and passage. Debate on this motion is limited to whether the bill should be given third

reading. Amendments are permitted at this stage but they must be of a general nature, similar to those allowed on second reading. If the vote is favourable, the bill is introduced in the Senate where it goes through a somewhat similar though not identical process, since each chamber has its own rules of procedure. After the bill has been passed by both houses, it is given royal assent by the Governor General or by his deputy, one of the judges of the Supreme Court of Canada. The assent ceremony takes place in the Senate chamber in the presence of representatives of both houses of Parliament. The bill comes into force as soon as it is assented to, unless there is a provision in the bill stating that it will come into force on the day on which it is officially proclaimed.

Duration and sessions of Parliaments. The length and sessions of the 27th to the 31st Parliament, covering the period from January 1966 to December 1979, are given in Table 3.1, along with the opening of the 32nd Parliament. Similar information of the period from Confederation to 1917 (the first to the 12th Parliament) is given in the *Canada Year Book 1940* p 46; of the 13th to the 17th Parliament in the 1945 edition, p 53; of the 18th and 19th Parliaments in the 1957-58 edition, p 46; of the 20th to the 23rd Parliament in the 1965 edition, p 65; and of the 24th to the 26th Parliament in the 1975 edition, p 132.

The Senate

3.3.1

The Senate is responsible for the protection of the various provincial, minority and sectional interests in Canada. While the composition of the House of Commons is based on the principle of representation by population, Senate membership is based on the principle of equal regional representation.

This feature of the Senate is reflected in its make-up. The Senate has 104 seats distributed on a regional basis: Ontario, 24; Quebec, 24; the Maritime provinces, 24 (10 each from Nova Scotia and New Brunswick and four from Prince Edward Island); Newfoundland, six; the Western provinces, 24 (six each from Manitoba, Saskatchewan, Alberta and British Columbia); and Yukon and Northwest Territories, one each.

Senators are appointed, in the Queen's name, by the Governor General on the advice of the prime minister. To qualify for appointment to the Senate, a person must be at least 30 years of age and own real property to the net value of at least \$4,000 in the province for which he or she is appointed. In Quebec, senators are appointed for each of the original 24 electoral divisions in that province and they must reside, or have their property qualification, in the particular division for which they are appointed. Until 1965, senators were appointed for life; now the retirement age is 75. In May 1980 the average age in the Senate was 63.5.

The Senate performs three basic functions. In its legislative role, the Senate acts as a court of revision by reviewing Commons bills and frequently amending them. The amendments, often of a technical or clarifying nature, are usually concurred in by the Commons. Constitutionally, the Senate's legislative power is equal to that of the House of Commons. Any bill can be introduced in the Senate except a money bill. Although the Senate can reject any bill, it has rarely exercised this power.

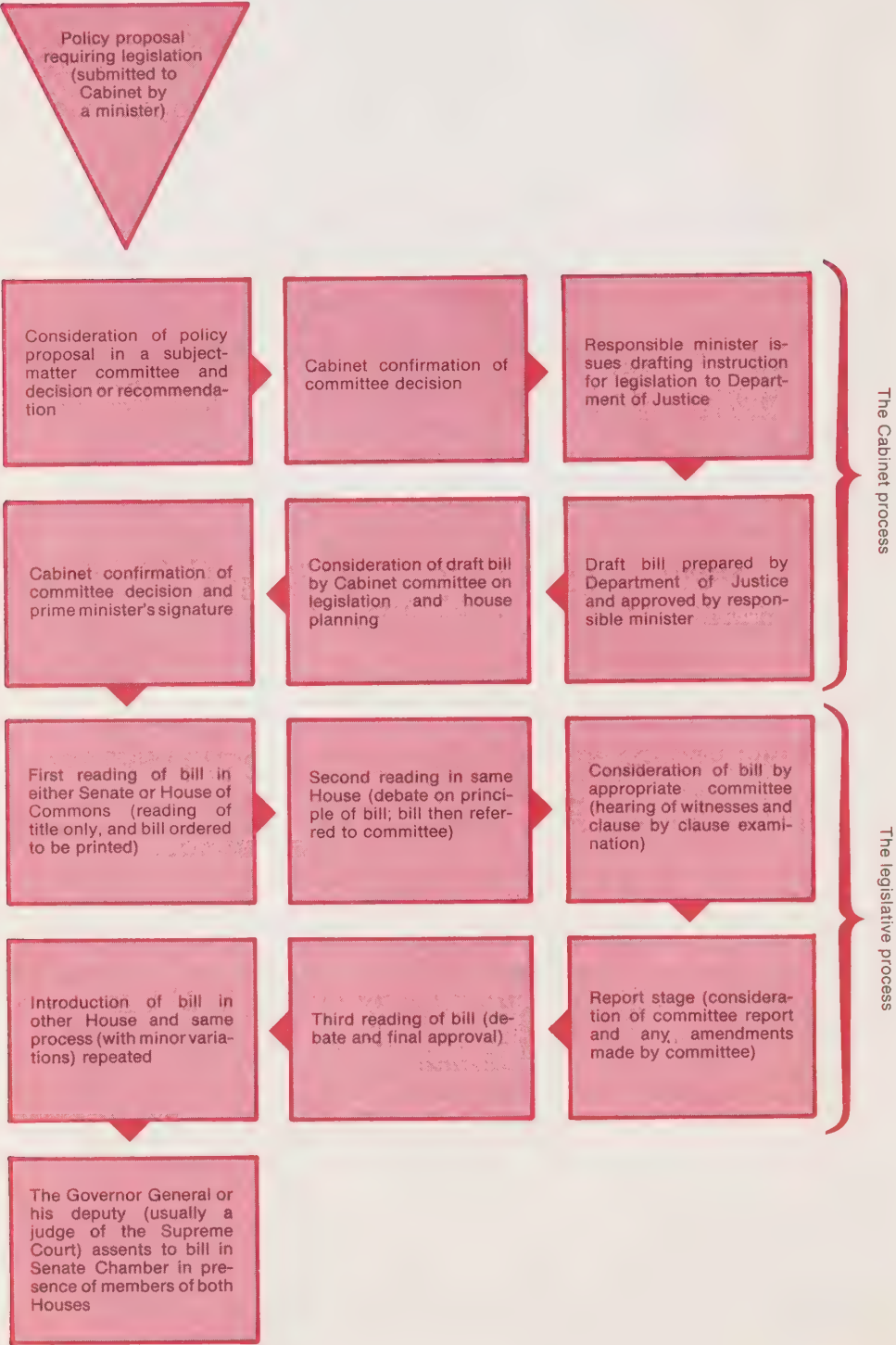
Since 1971, it has been the practice to refer the subject-matter of major government bills to Senate committees before their formal introduction in the Senate. This has enabled the Senate to conduct thorough studies and, in some instances, to make recommendations for changes while a bill is still before the Commons.

In its deliberative role, the Senate provides a national forum for the discussion of public issues and the airing of regional concerns and grievances from all parts of Canada. On two days notice, a senator can start a debate, with no time limits, on any matter of regional or public concern.

Third is the Senate's investigative function. Inquiries into major social and economic issues by its standing and special committees have produced reports that have often been followed by remedial legislation or changes in government policy.

Representation in the Senate has grown from 72 at Confederation to its present total of 104 members, through the addition of members to represent new provinces and territories. The growth of membership in the Senate is summarized in Table 3.2.

The legislative process



As at May 1980 representation in the Senate by political parties was as follows: Liberals, 69; Conservatives, 26; Independents, two; Independent Liberal, one; Social Credit, one; vacancies, five.

A list of senators is published in Appendix 8 of this edition.

The House of Commons

3.3.2

Following the 1971 Census the number of members in the House of Commons was determined by the representation commissioner in accordance with Section 51 of the BNA Act, with the total representation at 264.

The readjustment of the federal electoral districts was carried out during 1972 and 1973 in accordance with the Electoral Boundaries Readjustment Act. The last of 10 reports was submitted to the Commons in July 1973. After debate it was agreed to suspend the readjustment until January 1, 1975. To this effect, the Electoral Boundaries Readjustment Suspension Act was given royal assent on July 27, 1973.

On December 20, 1974 royal assent was given to the Representation Act, 1974 which removed the temporary suspension of the Electoral Boundaries Readjustment Act and provided for representation in the Commons under a revised formula awarding provinces the following number of members: Ontario 95, Quebec 75, British Columbia 28, Alberta 21, Manitoba 14, Saskatchewan 14, Nova Scotia 11, New Brunswick 10, Newfoundland seven, Prince Edward Island four, Northwest Territories two and Yukon one. The number of representatives elected at each of the 32 general elections since Confederation is given in Table 3.3.

Salaries, allowances and pensions. In 1980 members of the Senate and House of Commons received sessional allowances of \$30,700 and \$30,600 respectively per annum. This rate was subject to an annual adjustment based on the industrial composite index or 7%, whichever was less. For each session of Parliament, they could also be paid such travelling expenses between their home or constituency and Ottawa as required to perform their duties. A senator received an annual expense allowance of \$6,600 and a member of the House of Commons received an expense allowance of \$13,500 to \$17,900 dependent upon the electoral district represented; neither was subject to income tax and was payable monthly. A member of the House of Commons could receive up to \$14,400 annually for the payment of staff in the constituency, and up to \$5,200 annually for rental of premises in the constituency. With the opening of each Parliament and for its duration, a special allowance of \$1,000 is available to the member to purchase furniture and equipment. The member of the Senate occupying the position of opposition leader in the Senate was paid an annual allowance of \$10,100. The deputy leaders of the government and of the opposition in the Senate received additional annual allowances of \$4,900 and \$4,000 respectively. The remuneration of the prime minister was \$37,800 a year and of a cabinet minister and the leader of the opposition in the House of Commons \$22,600 a year in addition to the sessional and expense allowances each received as a member of Parliament. The chief government whip, the chief opposition whip, the opposition house leader and the leader of a party having a recognized membership of 12 or more in the House of Commons, other than the prime minister and the leader of the opposition, each received an annual allowance of \$5,900 in addition to the sessional allowance and expense allowance. In addition to sessional and expense allowances, the speaker of the Senate received a salary of \$15,000 per annum, the speaker of the House of Commons, \$22,600 per annum and the deputy speaker of the House of Commons, \$8,500 per annum. The speakers of the Senate and of the House of Commons were also each entitled to \$3,000 and the deputy speaker of the House of Commons to \$1,500, in lieu of residence; these allowances were not taxable. The deputy chairman of committees received an annual allowance of \$5,900. Parliamentary secretaries to ministers of the Crown received an annual allowance of \$5,900, in addition to their sessional and expense allowances. Motor vehicle allowances of \$2,000 were paid to ministers of the Crown and to the leader of the opposition in the House of Commons, and motor vehicle allowances of \$1,000 were paid to the speakers of the Senate and of the House of Commons; these allowances were not taxable. The sessional and expense allowances of a member or senator were subject to a total

deduction of \$120 per day (\$60 from each allowance) for every day beyond 21 on which the member or senator did not attend a sitting of the House of Commons or Senate, unless unable to attend because of illness or public or official business.

A member of Parliament contributes 7.5% of his sessional indemnity toward his retirement allowance, which is based on the average of the sessional indemnity received over the best consecutive six years of his pensionable service accumulated as follows: 3.5% of this six-year average for each of the first 10 years of pensionable service; 3% of this average for each of the next 10 years; 2% of this average for each of the next five years; and 2% of this average for each of the years of pensionable service earned by his contributions from salary for extra duties performed, for example, as a minister; subject to an overall maximum of 75% of that best six-year average. The member holding the office of prime minister contributes from the salary payable to him under the Salaries Act an amount equal to 6% of that salary to the consolidated revenue fund. Survivors' benefits are as follows: 60% of the member's pension entitlement to the widow or widower; if there is a surviving parent, 10% of the member's pension entitlement for each child up to three; and if there is no surviving parent, 20% of the member's pension entitlement for each child up to four. A member who was a member on March 31, 1970 had a year in which to elect to come under the plan described here or to remain under a previous plan, described in the *Canada Year Book 1969* p 75.

An act to make provision for the retirement of members of the Senate (SC 1965, c.4) entitles a senator appointed after June 2, 1965 to become a contributor under the provisions of the Members of Parliament Retiring Allowances Act. Senators appointed prior to that date and who have not reached age 75, who wish to come under the provisions of this act, are also entitled to become contributors. Under the provisions of the Retirement Act, as amended, a senator contributes 6% of \$30,700. A senator appointed before June 2, 1965 who within one year of reaching age 75 resigns, or who resigns because of some permanent infirmity disabling him from performing his duties, may be granted an annuity equal to two-thirds of the sessional indemnity. The widow of a senator granted such an annuity may receive an annuity equal to two-ninths of it.

Every former prime minister who held office for four years will receive from the consolidated revenue fund two-thirds the annual salary provided for prime ministers under the Salaries Act beginning when he ceases to hold any office in Parliament, or reaches age 65, whichever is the later. The allowance continues during his lifetime. The widow of a prime minister will receive annually one-half the allowance that was being paid or that would have been paid in the event that he died before receiving it. This allowance would commence immediately after her husband's death and continue during her natural life or until her remarriage.

None of these allowances is payable while the recipient remains a member of Parliament.

The federal franchise. The present federal franchise laws are contained in the Canada Elections Act (RSC 1970, c.14, 1st Supp.) as amended by the Election Expenses Act (SC 1973-74, c.51). Generally, the franchise is conferred upon all Canadian citizens who have reached age 18 and ordinarily live in the electoral district on the date fixed for the beginning of the enumeration at the election. Persons denied the right to vote are: the chief electoral officer and the assistant chief electoral officer; judges appointed by the Governor-in-Council; the returning officer for each electoral district; inmates of any penal institution; persons whose liberty of movement is restricted or who are deprived of the management of their property because of mental disease; and persons disqualified by law for corrupt or illegal practices.

The special voting rules set out in Schedule II to the Canada Elections Act prescribe voting procedures for members of the Canadian forces, for members of the federal public service posted abroad, and also for veterans receiving treatment or domiciliary care in certain institutions.

Electoral districts, voters on list, votes polled and names of members of the House of Commons elected at the 31st general election, May 22, 1979 are given in Table 3.4

and at the 32nd general election, February 18, 1980, in Table 3.5. Table 3.6 indicates voters on the lists and votes polled at federal general elections in 1972, 1974, 1979 and 1980.

The judiciary

3.4

Parliament is empowered by Section 101 of the BNA Act to provide for the constitution, maintenance and organization of a general court of appeal for Canada and for the establishment of any additional courts for the better administration of Canada's laws. Under this provision Parliament has established the Supreme Court of Canada, the Federal Court of Canada and certain miscellaneous courts. An account of the judiciary and legal system of Canada is presented in Chapter 2.

Federal government administration

3.5

Financial administration and control

3.5.1

The financial affairs of the Government of Canada are administered under the basic principle set out in the BNA Act, that no tax shall be imposed and no money spent without the authority of Parliament and that expenditures shall be made only for the purposes authorized by Parliament. The government introduces all money bills and exercises financial control through a budgetary system based on the principle that all the financial needs of the government for each fiscal year should be considered at one time so that both the current and prospective conditions of the public treasury may be clearly evident.

Estimates and appropriations. Treasury Board, whose secretariat is a separate department of government under the president of the Treasury Board, co-ordinates the estimates process. Under the Financial Administration Act, the board may act for the Privy Council in all matters of financial management (including estimates, expenditures, financial commitments, establishments, revenues and accounts), personnel management and general administrative policy in the public service.

Departments submit forecasts of their requirements about 12 months before a new fiscal year. These are divided into "A Budgets" for the next three years, to maintain the current levels of service, and "B Budgets" for new activities or expansion of existing activities. These proposals are reviewed by Treasury Board in the light of cabinet expenditure guidelines that express government priorities. The Treasury Board secretariat prepares recommendations for the budgetary and non-budgetary allocations to each program for Treasury Board and cabinet review. In August of the year preceding the fiscal year, departments are advised of the allocations approved by cabinet. Departments then develop detailed estimates of their resource requirements for the new year and submit them at the end of October. Following review by Treasury Board and approval by cabinet, they are tabled in Parliament in February.

Main estimates and supplementary estimates are referred to committees of the House of Commons. The standing orders of the house (March 1975) call for the referral of the new year main estimates to standing committees of the house by March 1 of the expiring fiscal year. The committees must report back to the house not later than May 31. Supplementary estimates are referred to standing committees immediately after they are tabled and reporting dates are stipulated.

There are three supply periods that end December 10, March 26 and June 30. The first supplementary estimates for a year are usually dealt with in the December period and the final supplementary estimates in the March period. In addition, interim supply (consisting of 3/12ths for all voted items in main estimates and extra 12ths for some voted items) is dealt with in the March period. In the June period the house is asked to provide full supply on main estimates. In each supply period a number of days are allotted to the business of supply. Opposition motions have precedence over all government supply motions on allotted days and opportunities to put forward motions of non-confidence in the government are provided. On the last allotted day in each period, the appropriation acts then before the house must be voted on. These acts

authorize payments out of the consolidated revenue fund of the amounts included in the estimates, whether main or supplementary, subject to the conditions stated in them.

The budget. The finance minister usually presents his annual budget speech in the House of Commons some time after the main estimates have been introduced. The budget speech reviews the state of the national economy and the financial operations of the government in the previous fiscal year and gives a forecast of the probable financial requirements for the year ahead, taking into account the main estimates and allowing for supplementary estimates. At the close of his address, the minister tables the formal notices of ways and means motions for any changes in the existing tax rates or rules and customs tariff which, in accordance with parliamentary procedure, must precede the introduction of any money bills. These resolutions give notice of the amendments which the government intends to ask Parliament to make in the taxation statutes. However, if a change is proposed in a commodity tax, such as a sales tax or excise duty on a particular item, it is usually effective immediately; the legislation, when passed, is retroactive to the date of the speech.

The budget speech supports a motion that the house approve in general a budgetary policy of the government; debate on this motion may take up six sitting days, but once it is passed the way is clear for consideration of the budget resolutions. When these have been approved by the committee, a report to this effect is made to the house, and the tax bills are introduced and dealt with in the same manner as all other government financial legislation.

Revenues and expenditures. Administrative procedures for revenues and expenditures are, for the most part, contained in the Financial Administration Act.

The basic requirement for revenues is that all public money shall be paid into the consolidated revenue fund, which is the aggregate of all public money on deposit to the credit of the Receiver General for Canada, who is the supply and services minister. Treasury Board has prescribed detailed regulations for the receipt and deposit of this money. The Bank of Canada and the chartered banks are the custodians of public money. Balances are apportioned among the various chartered banks according to a percentage allocation established by agreement among all the banks and communicated to the finance department by the Canadian Bankers' Association. The daily operating account is maintained with the Bank of Canada and the division of funds between it and the chartered banks takes into account the immediate cash requirements of the government and consideration of monetary policy. The finance minister may purchase and hold securities of, or guaranteed by, Canada and pay for them out of the consolidated revenue fund or may sell such securities and pay the proceeds into the fund. Thus, if cash balances in the fund exceed immediate requirements, they may be invested in interest-earning assets. In addition, the finance minister has established a purchase fund to assist in the orderly retirement of the public debt.

Treasury Board has central control over the budgets of departments and over financial administrative matters generally, principally during the annual consideration of departmental long-range plans and of the estimates. The board also has the right to maintain continuous control over certain types of expenditure to ensure that activities and commitments for the future are held within approved policies, and that the government is informed of and approves any major development of policy or significant transaction that might give rise to public or parliamentary criticism.

To ensure enforcement of the expenditure decisions of Parliament, the government and ministers, the Financial Administration Act provides that no payment shall be made out of the consolidated revenue fund without the authority of Parliament and no charge shall be made against an appropriation except on the requisition of the appropriate minister or a person authorized by him in writing. These requisitions, which must meet certain standards prescribed by Treasury Board regulation, are presented to the receiver general, who makes the payment.

At the beginning of each fiscal year, or whenever Treasury Board may direct, each department submits a division of each vote included in its estimates into allotments. Once approved, they cannot be varied or amended without the consent of the board. To avoid overexpenditures, commitments due to be paid within a fiscal year are recorded

and controlled by the departments concerned. Commitments made under contract that will fall due in succeeding years are recorded since the government must be prepared in the future to ask Parliament for appropriations to cover them. Any unspent amounts in the annual appropriations lapse at the end of the fiscal year, but for 30 days subsequent to March 31 payments may be made and charged to the previous year's appropriations for work performed, goods received or services rendered prior to the end of that fiscal year.

Public debt. In addition to collecting and disbursing public money, the government receives and pays out substantial sums in connection with its public debt operations. The finance minister is authorized to borrow money by the issue and sale of securities at whatever rate of interest and under whatever terms and conditions the Governor-in-Council approves. Although new borrowings require specific authority of Parliament, the Financial Administration Act authorizes the Governor-in-Council to approve borrowings, as required, to redeem maturing or called securities. To ensure that the consolidated revenue fund will be sufficient to meet lawfully authorized disbursements, he may also approve the temporary borrowing of necessary sums for periods not exceeding six months. The Bank of Canada acts as the fiscal agent of the government in the management of the public debt.

Accounts and financial statements. Under the Financial Administration Act, Treasury Board may prescribe the manner and form in which the accounts of Canada and the accounts of individual departments shall be kept. Annually, on or before December 31 or, if Parliament is not then sitting, within any of the first 15 days after Parliament resumes, the *Public accounts*, prepared by the receiver general, are laid before the Commons by the minister of finance. The *Public accounts* contain a survey of the financial transactions of the fiscal year ended the previous March 31 and statements of revenues and expenditures, assets and direct and contingent liabilities, together with other accounts and information required to show the financial position of Canada. The statement of assets and liabilities is designed to disclose the net debt, which is determined by offsetting against the gross liabilities only those assets regarded as readily realizable or interest- or revenue-producing. Fixed capital assets, such as government buildings and public works, are charged to budgetary expenditures at the time of acquisition or construction and are shown on the statement of assets and liabilities at a nominal value of \$1.00. Monthly financial statements are also published in the *Canada Gazette*.

The auditor general

3.5.2

The government's accounts are subject to an independent examination by the auditor general who is an officer of Parliament. With respect to expenditures, this examination is a post-audit to report whether the accounts have been properly kept, the money spent for the purposes for which it was appropriated by Parliament and as authorized; any audit before payment is the responsibility of the requisitioning department or agency. With respect to revenues, the auditor general must ascertain that all public money is fully accounted for and that the rules and procedures applied ensure an effective check on the assessment, collection and proper allocation of the revenue. With respect to public property, he must satisfy himself that essential records are maintained and that the rules and procedures applied are sufficient to safeguard and control it. The auditor general reports the results of his examination to the Commons, calling attention to any case which he considers should be brought to the notice of the house. He also reports to ministers, the Treasury Board or the government any matter which in his opinion calls for attention so that remedial action may be taken promptly. It is the usual practice to refer the *Public accounts* and the *Auditor General's report* to the House of Commons Standing Committee on Public Accounts, which may review them and report the findings and recommendations to the Commons.

Government employment

3.5.3

Treasury Board (a statutory committee of cabinet) has overall responsibility for personnel management in the federal public service. It is responsible for development

and application of personnel policies, systems and methods to ensure that the people needed to carry out programs effectively are obtained at competitive wages and put to efficient use with consideration for the individual and collective rights of employees.

Under provisions of the amended Financial Administration Act and the Public Service Staff Relations Act, both proclaimed in March 1967, Treasury Board is responsible for the development of policy guidelines, regulations, standards and programs in the areas of classification and pay, conditions of employment, collective bargaining and staff relations, official languages, human resources training, development and utilization, pensions, insurance and other employee benefits and allowances, and other personnel management matters affecting the public service. Treasury Board is also responsible for making recommendations on organization development, human resources planning, the determination and evaluation of training needs and education programs, and standards governing health and safety. It advises departments and agencies on the design and implementation of systems to improve personnel management.

Responsibility for classification and the administration of salaries has, with a few exceptions, been delegated to departments, subject to a monitoring process. Benefit programs and allowance policies approved by the board are designed to give departments maximum responsibility for administration.

Under the system of collective bargaining established by the Public Service Staff Relations Act, Treasury Board is the employer for employees in the public service, except for separate employers such as the National Research Council and the National Film Board. The board negotiates collective agreements with unions representing 81 bargaining units and advises departments on their administration. Consultations and some negotiations are held with representatives of bargaining agents, directly or through the National Joint Council, on matters which are not subject to bargaining or which have wide application in the public service. The board determines terms and conditions of employment of employees excluded from collective bargaining, and develops policy guidelines and standards to govern physical working conditions and occupational health and safety. It determines the employer position on grievances referred to adjudication, and advises or assists departmental management regarding discipline and grievance cases. The board presents the position of the employer in applications for certification by employee organizations and in hearings before the Public Service Staff Relations Board on applications for the exclusion of employees from bargaining units.

The board develops policy guidelines for public service pension, insurance and related programs, co-ordinates their administration and recommends periodic revisions. It negotiates reciprocal pension transfer agreements with other public and private employers. It also studies and proposes means of ensuring compatibility between public service employee benefits and social security programs such as medicare and the Canada and Quebec pension plans.

3.5.4 Public Service Commission

The Public Service Employment Act, which became effective in March 1967, continues the status of the Public Service Commission as an independent agency responsible to Parliament. The commission has the exclusive right and authority to make appointments to and from within the public service. The commission is also empowered to operate staff development and training programs, to assist deputy heads in carrying out training and development and in 1972 was charged to investigate cases of alleged discrimination on grounds of sex, race, national origin, colour or religion in the application and operation of the Public Service Employment Act. Age and marital status were added to these grounds by amendment to the act in 1975.

It may establish boards to decide on appeals against appointments made from within the public service and against release or demotion for incompetence or incapacity; to make recommendations on the revocation of appointments improperly made under delegated authority; and to decide on allegations of political partisanship.

The commission grants or withholds approval of applications for leave of absence from public servants who wish to be candidates in federal, provincial or territorial elections and investigates allegations of improper political activities by public servants.

The act authorizes the commission to delegate to deputy heads any of its powers, except those relating to appeals and inquiries. The commission has delegated powers to make appointments in operational and administrative support categories; employing departments are required to use Canada employment centres as their recruitment agency for appointments from outside the public service. Appointing authority has been delegated in the administrative and foreign service, technical, and scientific and professional categories under conditions which preserve the commission's authority as central recruiting agency for the public service of Canada with a few exceptions, that is, those cases where a department is virtually the sole employer of a particular occupational specialty. The commission ensures that appointments made under delegated authority comply with the law and commission policies.

The Public Service Commission is guardian of the merit principle, ensuring that high standards are maintained in the service, consistent with adequate representation of the two official language groups, a bilingual capability to the extent prescribed by the government, equal employment and career development opportunities irrespective of sex, race, national origin, colour, age, marital status or religion, and encouragement of opportunities for the disadvantaged.

Every citizen may apply for positions. Competitive examinations are announced through the news media and posters displayed on public notice boards of major post offices, Canada employment centres, Public Service Commission offices and elsewhere.

One of the paramount responsibilities of the Public Service Commission relates to staffing in accordance with the merit principle. In recognition of affinity of work and for administrative reasons, public service positions have been aggregated in six broad occupational categories: executive, scientific and professional, technical, administrative and foreign service, administrative support, and operational. The classification system divides these categories into a host of occupational groups, in which positions are similar in skills required and the work performed.

Appointments to public service positions are normally made from within the service, except when it may be in the best interests of the service to do otherwise. In an internal selection process, prospective candidates may be identified through an employee inventory, or may respond to a notice posted to advertise the position. The successful candidate is chosen by a selection board which examines all the candidates. Unsuccessful candidates may appeal the results of the competition. The Public Service Commission maintains an employee inventory for positions at senior management and senior executive levels.

Under other circumstances it may be decided to transfer employees between positions. In exceptional instances an employee may be promoted without competition; other public servants have the right to appeal such a staffing action. A right to appeal also exists when a decision has been taken to recommend an employee's demotion or release because of incompetence or incapacity.

The Public Service Commission offers interdepartmental courses in government administration, occupational training and management improvement. The commission acts as the consultant and adviser to deputy heads, and training and development facilities are made available to train employees for specific occupations or for promotion in administrative and managerial ranks.

In order that departments may serve the public in accordance with the Official Languages Act, the commission ensures that employees appointed are qualified to meet the linguistic requirements of positions and, in situations where they do not qualify, that incumbents or winners of competitions for bilingual positions receive training in their second official language. Part-time language training is also available to other public servants.

The commission has specific responsibilities in language training, research and the development of selection standards for the linguistic requirements of positions and groups of positions within the federal public service. It must establish both the method of assessing language knowledge and the degree of language knowledge or proficiency of candidates.

Appropriate selection standards are formulated from the decisions of deputy heads based on the linguistic requirements of positions and groups of positions.

3.5.5 Native peoples

Indians. The federal Indian affairs and northern development department is responsible for meeting statutory obligations to Indians registered under the Indian Act and for programs approved specifically for them.

The department's community services branch assists with the physical development of Indian communities which involves planning, housing, water, sanitation, electricity and the construction and maintenance of roads on reserves. Indian participation in these activities and in services such as school maintenance, fire and police protection and local government is increasing as band management is extended. For more than 10 years the department has assisted Indians to develop the expertise to manage their communities. Under departmental programs, capital and operating funds are provided to bands. In 1978-79 Indian and Inuit councils administered the expenditure of approximately \$232.5 million in public funds and more than \$177.9 million in band funds on a variety of community services projects. Along with capital, operation and maintenance funds, the department provides core funds to band councils. Core funds are based on total band membership and are used to finance items such as band offices and associated operating costs, support staff, salaries, professional advisory services and honoraria, and travel costs for chiefs and councillors. Additional funds to administer various programs are provided at levels negotiated for each activity.

The role of the federal government in programs for Indians has changed from direct program management at the local level to an advisory and consultative capacity as Indians assume responsibility for managing their own affairs. Emphasis is placed on definition of needs and priorities with the department and Indian bands working jointly, and on development of close consultation in both policy and administrative matters.

Under agreements with the federal government, provincial Indian associations receive funds to administer community development programs planned jointly with government officials, but administered by the associations themselves. These programs are intended to help Indians to improve social, economic and cultural conditions in their communities.

Since the first such agreement with the Manitoba Indian Brotherhood in 1969, others have been made with Indian associations in Nova Scotia, New Brunswick, Ontario, Saskatchewan, British Columbia, Yukon and Northwest Territories.

The Dakota Ojibway Tribal Council (DOTC) was founded in 1974 by seven bands in southwest Manitoba to establish a legally constituted forum. Their objective was to improve local control of services by phasing out the DIAND service centre in Brandon and not only administer the services and program delivery of departmental activities but also plan and implement programs relevant to their community needs and aspirations.

Since 1975 the DOTC has provided advisory services previously administered by the department in such areas as band finance, housing inspection, fire prevention, community counselling, band economic development and student counselling. Negotiations were started with the department for taking over responsibility for membership, social development and post-secondary education.

In Alberta the Indian Association receives funds to monitor, assess and provide input into existing or projected programs. Some bands were negotiating with the Indian affairs department to turn over certain programs and personnel resources for administration by the bands themselves.

British Columbia's provincial government was collaborating with Indian associations toward tripartite agreements with the federal government. Agreements were signed between the associations and the BC region of the Indian and Inuit program, to facilitate research and recommend courses of action.

Establishment of the Indian Economic Development Fund (IEDF) in 1970 was a landmark in Indian economic development. The fund formed a financial base for the department's mandate to assist Indians to develop income opportunities and create employment. Capital was provided to Indian businessmen and businesses and basic management skills and technical expertise were made available. From the outset, an important provision of the fund was that Indians be involved in the design and delivery of economic programs.

During the fiscal year 1978-79, the Indian and Inuit program approved 313 loans for \$3.8 million and guaranteed 33 loans from private sources totalling \$11.0 million.

Main estimates during the fiscal year 1978-79 authorized about \$25.0 million in grants and contributions to develop corporations such as National Indian Arts and Crafts Corporation (NIACC) and Manitoba Indian Agricultural Program (MIAP). The economic development branch has provided to Indian enterprises 562 IEDF grants and contributions for start-up and operating costs totalling \$5.3 million. To help Indians establish their own enterprises, the branch, through the IEDF, assisted them with business planning and helped provide other professional and technical services. A total of 789 jobs were created or maintained in 1978-79. In the first eight years of the fund's operation about 13,800 employment man-years were created or maintained. Financing was advanced to enterprises in agriculture, forestry, fishing and trapping, construction, real estate, manufacturing, transportation, communications and wholesale-retail operations.

The reserves and trusts group is responsible for ensuring that treaty obligations covering lands and memberships are met and that statutory responsibilities under the Indian Act for membership and the administration and management of Indian lands are fulfilled. The group also helps bands obtain maximum benefits from renewable and non-renewable resources on their own reserves.

Since 1969 the government has provided financial assistance to native people throughout Canada to research and develop their claims to traditional interests in lands, and their rights under treaties or the Indian Act.

In August 1973, the minister of Indian and northern affairs announced a claims policy which recognized that "comprehensive claims" must be settled and stated that the most promising way of reaching settlement was through negotiation. Comprehensive claims are based on the loss of traditional use and occupancy of lands (described as a "native interest" in the lands) where it has not been extinguished by treaty or superseded by law. The 1973 policy also reaffirmed a longstanding government policy that lawful obligations must be met, in stating it would deal with "specific claims" which are based on alleged maladministration of Indian land or assets under the Indian Act and on the alleged improper interpretations or fulfilment of treaties.

In July 1974, the Office of Native Claims (ONC) was set up to be primarily responsible for representing the department and the federal government in negotiations with native groups about their claims.

Comprehensive claims. In 1971 the Crees in Northern Quebec began to express concern about their rights of usage and occupancy in the area of the proposed James Bay hydroelectric power dam. Negotiations began between all parties in 1974, culminating in a final agreement in November 1975.

In February 1976, the Inuit Tapirisat of Canada (ITC) presented a claim on behalf of the Inuit people of Northwest Territories. This was subsequently withdrawn and a revised claim presented in December 1977. Between May 1978 and February 1979 five negotiating meetings were held. In February 1979, due to a lack of progress, the ITC appointed new negotiators.

The Committee for Original People's Entitlement (COPE) submitted its claim in May 1977. After months of intensive negotiations, an agreement-in-principle was reached in October 1978.

In July 1974, the Indian Brotherhood of the Northwest Territories (IBNWT or Dene) and Métis Association of the Northwest Territories (MANWT) announced they would seek a single land claim settlement on behalf of the native people in the Mackenzie Valley. The MANWT subsequently decided to develop its own claim as it could not support the Dene declaration. The IBNWT submitted its claim in October 1976; the MANWT in September 1977. In September 1978, after several unsuccessful attempts to bring the two groups together to negotiate jointly their overlapping claims, the minister suspended negotiation funding. Both groups have been seeking ways to establish a joint negotiating process.

In Yukon, the Yukon native people presented their claim in February 1973. Between 1973-75, a series of meetings was held between all parties. Discussions during

1976-77 led to the parties concerned endorsing a concept of co-operative planning. In 1977, a tripartite planning council approved and made public four documents on various aspects of the claim. In January 1978, the Council for Yukon Indians (CYI) requested additional time to complete its negotiating position and to obtain community agreement. The CYI submitted its revised position paper in January 1979 and negotiations began in February.

In British Columbia, the Nishga Tribal Council presented a claim in April 1976, asserting aboriginal title to land in the Nass River Valley. At a tripartite meeting in January 1978, the BC and federal governments submitted their responses to the claim.

Specific claims. In Saskatchewan, an agreement was reached in August 1977 with the province and the Federation of Saskatchewan Indians on ways in which outstanding treaty land entitlements could be fulfilled. In February 1979, because of several unresolved issues and lacking a formal agreement with the province to deal with them, the minister announced that, in future, outstanding treaty entitlements would be dealt with band by band. Outstanding treaty land entitlements were also being discussed with Alberta and Manitoba.

In British Columbia, a federal-provincial offer of settlement, concerning lands cut off from Indian reserves as a result of a 1913-16 royal commission, was presented to the Cut-Off Bands of BC committee in January 1978. Negotiations continued on the elements of settlement to be applied in negotiation with each of the 22 bands affected.

Inuit. Canada's 23,000 Inuit, most of whom live in Northwest Territories, Quebec and Labrador, are the concern of the federal Indian affairs and northern development department, the government of Northwest Territories and provincial governments.

To supplement education, including occupational preparation available to Inuit in the North, the department arranges and co-ordinates a variety of education and training programs in southern Canada. Counselling units to assist Inuit students are established in Ottawa, Winnipeg and other locations as required.

A northern careers program was created and established by the Public Service Commission to create opportunities for northern native people to enter the public service and acquire the training necessary to qualify for middle and senior management positions. Approximately 50 man-years have been committed to the program.

Inuit Tapirisat of Canada (Eskimo Brotherhood) was founded in 1971 with financial assistance of the core-funding program of the secretary of state department. Regional associations affiliated with Inuit Tapirisat are the Committee for Original People's Entitlement serving Inuvialuit in the Western Arctic, the Northern Quebec Inuit Association, Labrador Inuit Association, Baffin Region Inuit Association and Kitikmeot Inuit Association serving Inuit in the Central Arctic.

The Indian and northern affairs department has a number of programs in place to encourage and promote Inuit language and culture. These include the publication and distribution of a variety of material in Inuktitut (the language of the Inuit) using the Roman and syllabic writing systems developed by the Inuit Language Commission; support to publishing Inuit authors and the development of standard Inuktitut vocabulary equivalents for legal, administrative, financial and medical terms.

Native involvement in film making and communications was significantly increased through the department's support of Inuit participation in Communications Canada's Anik B satellite program. Inuit of Northwest Territories and Northern Quebec have developed and are implementing and evaluating communications pilot projects designed to serve their social and cultural needs.

Departmental cultural grants also supported Inuit initiatives in the fields of art, music, literature and cross-cultural education enabling Inuit to share more widely their cultural heritage with other Canadians.

The Inuit Cultural Institute based at Eskimo Point, NWT is a focal point for cultural and educational concerns and programs related to traditional and present-day Inuit life. The institute also administers and oversees the implementation of recommendations of the Inuit language commission.

Resource development in the North has sparked the participation of native people in those activities in many ways. Native people were provided financial assistance to

present briefs and submissions to the Mackenzie Valley Pipeline Inquiry and to the Alaska Highway Pipeline Inquiry. In addition, native people participate on advisory boards which are established to give them a forum through which they can continue their involvement on projects of local or regional concern.

In the Eastern Arctic, Inuit communities are represented on the Eastern Arctic Marine Environmental Studies (EAMES) advisory board which reviews overall implementation and progress of environmental studies in the area related to offshore exploratory drilling. The community representatives keep their communities informed and bring feedback from the communities through the advisory board to the management.

In the Beaufort Sea, where offshore drilling is taking place, the Beaufort Sea Community Advisory Committee is consulted regularly on company activities. The committee, which represents all seven Beaufort Sea communities, participates in the public meetings held annually in those communities to review the contents of environmental, technical and social-economic reports before they are finalized and submitted to the department.

Each year the department enters an agreement with the drilling company (Dome/Canmar) operating in the Beaufort Sea. The agreements deal with training and employment opportunities for native people, procedures for ensuring that local business participates in the project wherever feasible, and consultation with communities in the region through the Beaufort Sea Community Advisory Committee. Particular attention is paid to opportunities for native women in areas of training, employment and business.

However, many Inuit still live by their traditional skills of hunting, trapping and fishing. One of the most successful enterprises is the production and sale of Inuit artwork — stone, bone and ivory sculpture and graphics. Most of these are marketed through Inuit Co-operatives which in 1979 marked their 20th anniversary. In addition to the production and marketing of arts and crafts, the co-operatives operate retail stores, hotels and fisheries and provide various municipal services. The co-operatives' annual volume of business in 1979 exceeded \$23 million and nearly \$7 million were paid to co-operative members in wages and for goods produced. After only two decades, the co-operatives were generating more money in annual wages and other related payments than the total amount of loans and grants put into them by all levels of government during the past 20 years.

Departments, boards, commissions and corporations

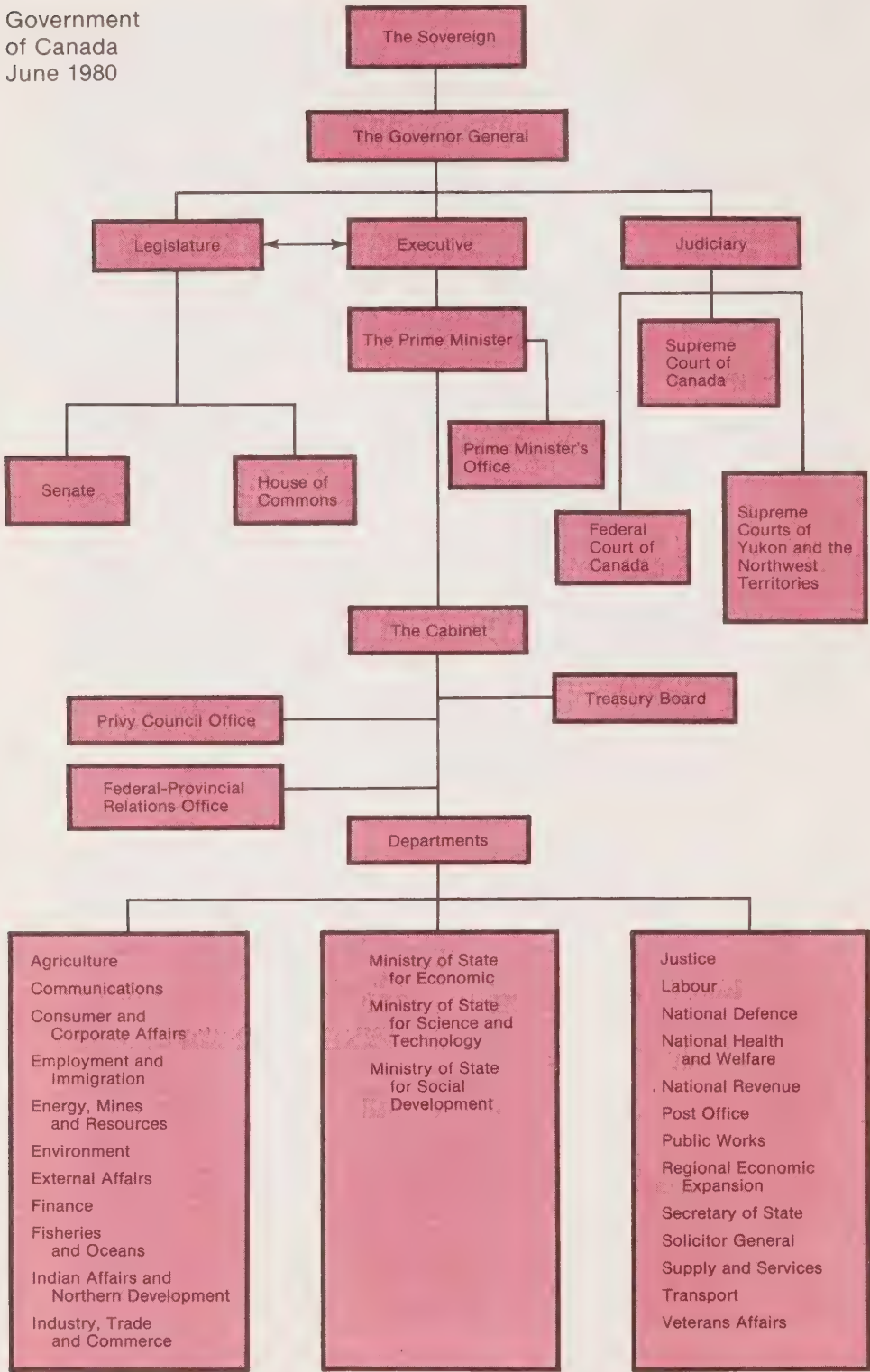
3.5.6

In Canada the work of government is conducted by federal departments, special boards, commissions and corporations owned or controlled by the Government of Canada, as well as several corporations in which the government holds a minority interest. Of the corporations owned by the Government of Canada, the Crown corporation mode of organization is the most common. The government has resorted to Crown corporations with increasing frequency to administer and manage public services, many of which require the combination of business enterprise and public accountability. The historical evolution of Crown corporations is described in the government's proposals on the control, direction and accountability of Crown corporations published in August 1977. Chapter I of that paper describes the historical and constitutional background of the Crown corporation form. Part VIII of the Financial Administration Act (RSC 1970, c.F-10) provides a uniform system of financial and budgetary control and of accounting, auditing and reporting for the majority of Crown corporations. In addition, that legislation defines a Crown corporation as a "corporation that is ultimately accountable, through a minister, to Parliament for the conduct of its affairs" and establishes three classes of Crown corporation: departmental, agency and proprietary.

Departmental corporations. A departmental corporation is defined as a corporation that is a servant or agent of Her Majesty in right of Canada and is responsible for administrative, supervisory or regulatory services of a governmental nature.

Agency corporations. An agency corporation is defined as a corporation that is an agent of Her Majesty in right of Canada and is responsible for the management of trading or

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service operations on a quasi-commercial basis or for the management of procurement, construction or disposal activities on behalf of Her Majesty in right of Canada.

Proprietary corporations. A proprietary corporation is defined as a corporation that is responsible for the management of lending or financial operations, or for the management of commercial or industrial operations involving the production of or dealing in goods and the supplying of services to the public, and is ordinarily required to conduct its operations without parliamentary appropriations.

Departmental corporations are governed by the provisions of the Financial Administration Act that apply to departments generally. Agency and proprietary corporations are subject to the provisions of Part VIII of the act; if there is any inconsistency between its provisions and those of any other act applicable to a corporation, the latter prevail. The same part provides for the regulation and process of approval of corporate budgets and the control of bank accounts, turning over surplus money to the receiver general, providing loans for limited working-capital purposes, awarding contracts and establishing reserves, keeping and auditing accounts, and preparing financial statements and reports for submission to Parliament through the appropriate minister.

A further form of control is exercised by Parliament through the power to vote financial assistance to a corporation, which may secure financing through parliamentary grants, loans or advances, by the issue of capital stock to the government, or by borrowings from the capital markets, often with a government guarantee.

Unclassified corporations. Several government-owned corporations are not listed in schedules to the Financial Administration Act but are governed by their own special act, letters patent or articles of incorporation: such as the Bank of Canada, the Canada Council, the Canadian National Railways Securities Trust, the Canadian Wheat Board, and the National Arts Centre Corp. The only provision of the Financial Administration Act to which they are subject is that governing the appointment of auditors, although the Governor-in-Council has the power in some instances to add an unclassified corporation to one of the schedules to the Financial Administration Act.

Other corporations. The federal government has established or assisted in the establishment of a number of corporations in which it holds a portion of the capital stock. In most cases, private sector investors hold the remaining shares; in several cases shares are held by provincial or other governments. These corporations, known as mixed or joint enterprises have been established either by a special act of Parliament, for example, the Canada Development Corp. or Telesat Canada, or by letters patent or articles of incorporation, for example, Panarctic Oils Ltd. Such corporations are not listed in the schedules of the Financial Administration Act and are not subject to its general provisions.

Appendix 1 of this edition provides concise descriptions of departments, Crown corporations, boards, commissions, offices and agencies of the federal government as of May 1980.

Federal Identity Program

3.5.7

The use of applied titles as alternatives to the statute names of departments, for example, Labour Canada, reflects the policy of the Federal Identity Program (FIP) stemming from a 1969 study conclusion that visual communications of the federal government were in urgent need of improvement. The heart of the FIP is the consistent application of specific identifying symbols by all organizations of the government. These symbols, organized into systematic formats with distinctive typography and colours form the visual identity of the government.

Policy direction for the program emanates from the cabinet. Program co-ordination is the responsibility of the Treasury Board secretariat's administrative policy branch. An interdepartmental advisory committee provides advice on implementation details and the management of the program.

The departments, agencies and other government organizations to which the program applies are required not only to implement it, but to assist with its further

development through active participation. These bodies have adopted applied titles where appropriate. These titles, such as Revenue Canada for Department of National Revenue and Health and Welfare Canada for Department of National Health and Welfare, will not replace the formal names which may be required for contracts, federal-provincial agreements and other legal applications. However, on such documents, the applied title shall appear as the principal identifying device.

3.5.8 Canadian Unity Information Office

The Canadian Unity Information Office (CUIO) was established in 1977 to help Canadians become better informed on issues that could have impact on the country's future. The CUIO gathers, develops and distributes information; responds to requests from individuals and organizations; guides and advises groups on projects promoting national unity; co-operates with federal departments and agencies; and helps to co-ordinate components of their information programs relating to Canadian unity.

CUIO produced a series of publications dealing with various aspects of the Canadian federal system, facts about Canada, and programs and services offered by the federal government. In the 1978-79 fiscal year, CUIO distributed more than 24 million publications through direct mail, displays and exhibitions and in response to requests.

Copies of a recording of *O Canada*, produced for the Olympic Games in Montreal were distributed to radio stations and organizations. A version of the recording with accompanying film was made available to television networks and stations.

3.6 Provincial and territorial governments

3.6.1 Provincial governments

In each of the provinces, the Queen is represented by a lieutenant-governor appointed by the Governor General-in-Council. The lieutenant-governor acts on the advice and with the assistance of his ministry or an executive council which is responsible to the legislature and resigns office under circumstances similar to those described concerning the federal government.

The legislature of each province is unicameral, consisting of the lieutenant-governor and a legislative assembly. The assembly is elected by the people for a statutory term of five years but may be dissolved within that period by the lieutenant-governor on the advice of the premier of the province.

Sections 92, 93 and 95 of the BNA Act, 1867 (Br. Stat. 1867, c.3 and amendments) assign legislative authority in certain areas to the provincial governments (see Chapter 2, Constitution and legal system).

Details regarding qualifications and disqualifications of the franchise are contained in the elections act of each province. In general, every person at a specified age who is a Canadian citizen or (in certain provinces) other British subject, who complies with certain residence requirements in the province and the electoral district of polling and who falls under no statutory disqualifications, is entitled to vote. Persons can vote in Prince Edward Island, New Brunswick, Quebec, Ontario, Manitoba, Saskatchewan and Alberta at age 18 and in Newfoundland, Nova Scotia and British Columbia at 19.

Newfoundland. The government of Newfoundland has a lieutenant-governor, an executive council and a house of assembly made up of 52 members elected for a term not to exceed five years. On July 4, 1974 the Honourable Gordon A. Winter became the lieutenant-governor. The 38th legislature in the history of Newfoundland and the tenth since Confederation, elected June 18, 1979, comprised 33 Progressive Conservatives and 19 Liberals. In May 1980 party standings had changed to 34 Progressive Conservatives and 18 Liberals.

The premier receives a salary of \$28,455 and cabinet ministers \$17,315 per annum, plus a car allowance of \$3,305, sessional indemnity of \$19,000 and a travelling expense allowance of from \$9,500 to \$14,500. Each member of the house of assembly receives a sessional indemnity of \$19,000 plus a travelling and expense allowance of from \$6,225 to \$10,225. The leader of the opposition receives the same salary and allowance as

ministers. Each member of the legislature is authorized to claim 12 round trips per annum from St. John's to a central point in their districts.

The executive council of Newfoundland is given in Appendix 8.

Prince Edward Island. The government of Prince Edward Island consists of a lieutenant-governor, an executive council and a legislative assembly. The Honourable J.A. Doiron was sworn in as lieutenant-governor on January 14, 1980. The legislative assembly has 32 members from 16 electoral districts who may serve for a statutory term not exceeding five years. Each district elects two representatives. The 55th general assembly elected April 23, 1979 consisted of 21 Progressive Conservatives and 11 Liberals; as at April 1, 1980 party standings had changed to 21 Progressive Conservatives, 10 Liberals and 1 vacancy.

A member of the assembly receives an indemnity of \$12,000 per annum and an additional \$6,000 tax-free for travelling and other expenses incurred in attending sessions and representing his district. In addition the premier receives a salary of \$31,000, and a cabinet minister \$21,000. The speaker of the assembly is paid an additional salary of \$5,000 and his expense allowance is \$2,000; additional salaries and expense allowances are also available to the deputy speaker in the amounts of \$2,500 and \$1,000, respectively, and to the leader of the opposition in the amounts of \$6,000 and \$2,500. All indemnities and allowances accrue from the date of election to the legislature and are paid monthly. No sessional indemnity or expenses are paid for any special session of the legislature.

The executive council of Prince Edward Island is given in Appendix 8.

Nova Scotia. The government of Nova Scotia consists of a lieutenant-governor, an executive council and a house of assembly. The Honourable John E. Shaffner became lieutenant-governor on December 23, 1978. The legislature has 52 members elected for a maximum term of five years. On September 19, 1978, 31 Progressive Conservatives, 17 Liberals and four New Democrats were elected to the province's 52nd legislature and 29th since Confederation. In byelections on May 6, 1980 the Progressive Conservatives took two seats from the Liberals. The legislature then consisted of 33 Progressive Conservatives, 15 Liberals and four New Democrats.

Each member of the house of assembly is paid an annual indemnity of \$14,800 and an annual expense allowance of \$7,400. In addition to the amounts to which they are entitled under the House of Assembly Act, the premier of the province receives an annual salary of \$32,000, all other cabinet members \$25,000 or less as the Governor-in-Council may determine, the leader of the opposition \$25,000, the speaker \$15,000, the deputy speaker \$7,500, and any member occupying the recognized position of leader of a recognized party other than the premier and leader of the opposition \$10,000.

The executive council of Nova Scotia is given in Appendix 8.

New Brunswick. The government of New Brunswick has a lieutenant-governor, an executive council and a legislative assembly. The Honourable H.J. Robichaud was sworn in October 8, 1971, as lieutenant-governor. The legislature elected October 23, 1978, the 49th in New Brunswick's history and 28th since Confederation, had 58 members, including 30 Progressive Conservatives and 28 Liberals, elected for a statutory term not to exceed five years.

The premier receives \$25,000 per annum in addition to the salary for any other portfolio he may hold. Each cabinet minister is paid \$16,000; each member of the legislative assembly receives \$14,015 and a \$7,008 allowance for expenses. The leader of the opposition receives an additional \$16,000. The speaker and deputy speaker are paid \$8,000 and \$2,500, respectively, in addition to the regular indemnity.

The executive council of New Brunswick is given in Appendix 8.

Quebec. In Quebec, legislative and executive powers are vested in the National Assembly and an executive council. As the representative of the Crown, the lieutenant-governor plays a role in the functioning of both branches. The Honourable Jean-Pierre Côté assumed that office on April 27, 1978.

The National Assembly consists of 110 members elected for a maximum term of five years. Party standings as at May 1980, following the general election of November

\$ 58,000
+ 14
= 72

15, 1976, and byelections in April and November 1979 were as follows: Parti Québécois 68, Liberals 29, Union nationale five, and Independents four. Four seats were vacant.

All members receive an annual indemnity of \$31,236 and a tax-free representation allowance of \$7,500. In addition, the Executive Council Act and the Legislative Assembly Act provide for additional taxable allowances for the prime minister (\$41,700), ministers (\$30,580), ministers of state (\$30,580), the speaker of the National Assembly (\$30,580), deputy speakers (\$13,900), parliamentary assistants (\$8,340), the leader of the official opposition (\$30,580), leaders of other recognized parties (\$12,510), the house leader of the official opposition (\$12,510), house leaders of other recognized parties (\$11,120), chief government whip (\$12,510), chief whip of the official opposition (\$8,340), whips of other recognized parties and deputy whips (\$6,950) and the chairmen of elected commissions (\$4,170). Internal regulations also provide for allowances for specified travelling by a member, for maintaining an office in his constituency and for a second residence in Quebec in cases where the member represents a riding outside the capital area.

The executive council of Quebec is given in Appendix 8.

Ontario. The government of Ontario consists of a lieutenant-governor, an executive council and a legislative assembly. In April 1974 the Honourable Pauline McGibbon took office as lieutenant-governor and in January 1979 her term of office was extended. In June 1980, John Black Aird was named to succeed her, to take office in September 1980. The legislative assembly is composed of 125 members elected for a statutory term not to exceed five years. At the provincial election of June 9, 1977, 58 Progressive Conservatives, 34 Liberals and 33 New Democrats were elected to the province's 31st legislature.

In addition to the regular ministries are the following provincial agencies: the Niagara Parks Commission, the Ontario Municipal Board, Ontario Hydro, the St. Lawrence Development Commission, the Ontario Northland Transportation Commission, the Liquor Control Board and the Liquor Licence Board.

Under the provisions of the Legislative Assembly Act (RSO 1970, c.240 as amended) each member of the assembly is paid an annual indemnity of \$20,012 and an expense allowance of \$7,800. In addition, the speaker receives a special annual indemnity of \$9,360 and a representation allowance of \$2,080, the deputy speaker and chairman of the committee of the whole house \$5,200, the leader of the official opposition a salary of \$18,720 and a representation allowance of \$3,120, and the leader of a party with a recognized membership of 12 or more in the assembly, \$5,200 and a representation allowance of \$1,560. Each member of the cabinet having charge of a ministry receives the ordinary indemnity as a member of the legislature in addition to his salary as a minister of the Crown. The salary provided in the Executive Council Act for the premier is \$26,000 and a representation allowance of \$4,680, for a cabinet minister having charge of a ministry \$18,720 and for a minister without portfolio an annual salary of \$7,500. Parliamentary assistants also receive an annual salary of \$5,200.

The executive council of Ontario is given in Appendix 8.

Manitoba. In addition to a lieutenant-governor, Manitoba has an executive council composed of 17 members and a legislative assembly of 57 members elected for a maximum term of five years. The Honourable Francis L. Jobin became lieutenant-governor on March 15, 1976. In the general election of October 11, 1977, 33 Progressive Conservatives, 23 New Democrats and one Liberal were elected to the 31st legislature.

The premier of the province is paid a salary of \$16,600 a year and each of the other members of the cabinet \$15,600. Members of the legislature were each paid a sessional indemnity of \$13,247 and a tax-free expense allowance of \$6,623 for the fiscal year ended March 31, 1979. Each member attending the session receives an additional allowance of \$900 for expenses incidental to the discharge of his duties as member. The leader of the opposition is paid \$15,600. The speaker of the legislative assembly receives an additional indemnity of \$6,000 and expenses not exceeding \$3,000 in aggregate. The deputy speaker receives an additional indemnity of \$3,500 and expenses not exceeding \$500 in aggregate. Members required to live away from home receive a per diem

allowance of \$40 from the opening of the session to prorogation excepting days during an adjournment for a period of four or more continuous days.

The executive council of Manitoba is given in Appendix 8.

Saskatchewan. The government of Saskatchewan consists of a lieutenant-governor, an executive council and a legislative assembly. On February 28, 1978 the Honourable C. Irwin McIntosh became lieutenant-governor. The statutory number of members of the legislative assembly is 61, elected for a maximum term of five years. As a result of the general election of October 1978, 44 New Democrats and 17 Progressive Conservatives were elected to form Saskatchewan's 19th legislature.

The premier receives \$29,348 and each cabinet minister \$22,078 annually in addition to a sessional indemnity and allowance. The leader of the opposition receives \$22,078 plus an office allowance of \$53,850 per annum. The speaker receives \$9,962 and the deputy speaker \$8,616.

Each member of the legislature is paid an annual indemnity of \$9,962, an expense allowance of \$8,885 and a sessional allowance of \$5,385, subject to a deduction of \$50 a day for days absent over five. Each of the members for the two northernmost constituencies of Athabasca and Cumberland receives an \$11,254 annual indemnity and a \$9,186 expense allowance. All members except members of the executive council and leaders of the opposition are entitled to an expense allowance of \$59 a day when attending a meeting of the assembly or of a legislative committee during a session. Government and opposition whips are paid an annual allowance of \$1,615 each and legislative secretaries an annual allowance of \$5,385 each.

The executive council of Saskatchewan is given in Appendix 8.

Alberta. In addition to the lieutenant-governor (since October 1979 the Honourable Frank Lynch-Staunton) the government of Alberta is composed of an executive council and a legislative assembly of 79 members elected for a maximum of five years. On March 14, 1979, 74 Progressive Conservatives, four members of the Social Credit party, and one of the New Democratic Party were elected to form the 19th legislature.

Each member of the legislative assembly receives a sessional indemnity of \$21,000, a \$6,176 expense allowance and an amount not to exceed \$50 for each day during the session when the member is necessarily absent from his ordinary place of residence. In addition to the indemnity and expense allowance, the speaker receives a salary of \$19,600 and the deputy speaker \$7,300. The salary of the leader of the opposition, in addition to the indemnity and expense allowance, is \$32,000. The speaker, deputy speaker and leader of the opposition also receive an amount not to exceed \$50 for each day during the session when they are necessarily absent from their ordinary place of residence. In addition to the sessional indemnity and allowance the premier receives \$39,300, other ministers \$32,000 and ministers without portfolio \$22,700. These figures have been in effect since November 1, 1979.

The executive council of Alberta is given in Appendix 8.

British Columbia. The government of British Columbia consists of a lieutenant-governor, an executive council and a legislative assembly. On May 18, 1978 the Honourable Henry P. Bell-Irving took office as lieutenant-governor. The legislative assembly has 57 members who are elected for a term not to exceed five years. As at May 1980 the assembly consisted of 31 Social Credit members and 26 New Democrats.

Each member of the executive council and the legislative assembly receives an annual allowance of \$21,000 and an annual expense allowance of \$10,500. In addition, the premier is paid an annual salary of \$28,000, each cabinet minister with portfolio \$24,000 and each member of the executive council without portfolio \$21,000. The leader of the opposition and the speaker receive special expense allowances of \$19,000; the deputy speaker and the leader of a recognized political party, \$8,500.

The executive council of British Columbia is given in Appendix 8.

Territorial governments

3.6.2

Yukon. The constitution for the government of Yukon is based on two federal statutes: the Yukon Act (RSC 1970, c.Y-2) and the Government Organization Act (SC 1966,

c.25). The Yukon Act provides for a commissioner as head of government and for a legislative body called the Yukon legislative assembly. Under the Government Organization Act, the minister of Indian affairs and northern development is responsible (with the Governor-in-Council) for directing the commissioner in the administration of Yukon.

In 1979 the minister of Indian affairs and northern development brought in changes which altered the executive level of the Yukon government. It now consists of five elected members of the Yukon legislative assembly who are appointed to an executive council or cabinet by the commissioner, upon the recommendation of the government leader. The commissioner is still the senior representative of the Indian affairs and northern development department in Yukon and performs duties similar to those of a lieutenant-governor in relation to the legislature. The executive council members are assigned portfolio responsibilities by the government leader.

The government sets its own private and corporate income tax rate. Tax collection is administered by the federal government. The Yukon government negotiates an annual deficit grant or transfer payment with the federal government to help defray the expenses of the territory.

The Yukon public service has approximately 1,200 employees, 18 conventional administrative departments and several special service departments. Whitehorse is the administrative centre of the government. A few departments have necessary regional postings and territorial agents represent the government in rural communities.

Certain areas have been designated to the commissioner for administration under the territory's Lands Ordinance. The remaining land is under the jurisdiction of the Indian affairs and northern development department.

The Yukon Act delineates the jurisdiction of the legislative assembly. It is like those of the provincial assemblies and has jurisdictional control of all matters of a local nature except that the federal government, through the Indian affairs and northern development department, retains control of Yukon's renewable and non-renewable natural resources. Jurisdiction for the territory's wildlife rests with the Yukon government. The legislature is called into session by the commissioner on the advice of the majority party leader.

Legislative authority for Yukon is vested in the Commissioner-in-Council. All bills must be approved by council and assented to by the commissioner before becoming law. As in other jurisdictions, the Governor-in-Council may disallow any ordinance within one year. Ordinances are printed on a sessional basis and consolidated annually.

Amendments to the Yukon Act passed by Parliament provided for an expansion of council membership from 12 to 16 and for future expansion to 25. Further amendments resulted in constitutional changes in 1979. These included the transfer of the daily administration of the government of Yukon from the commissioner to the five-member executive council.

Members are nominated to the executive council on the advice of the majority party leader and are responsible for all Yukon government portfolios.

Yukon legislative assembly members are elected for four-year terms. At the Yukon election in November 1978, 11 Conservatives, two Liberals, one New Democrat and two independents were elected from around the territory. The assembly usually meets twice a year in Whitehorse.

The commissioner, assembly and assembly staff are given in Appendix 8.

Northwest Territories. The Northwest Territories Act (RSC 1970, c.N-22) provides for an executive, legislative and judicial structure. The commissioner is the chief executive officer, appointed by the federal government and responsible for the administration of Northwest Territories under the direction of the minister of Indian affairs and northern development. The commissioner spends funds voted by council and all new revenue measures are subject to council approval. Normally the commissioner obtains federal approval of proposed legislation and budgetary measures before submitting them to council.

The council of Northwest Territories consists of 22 members elected for four years. It is required to meet at least twice a year, and in practice generally meets three times a

year, usually for four weeks at a winter session and for shorter spring and fall sessions. A clerk of council and a legal adviser provide the main administrative assistance. Debates are recorded verbatim.

The Northwest Territories Act gives the territorial council authority to legislate in most areas of government activity except for natural resources other than game; these are reserved to the federal government. Legislation must receive three readings and have the assent of the commissioner. The federal government may disallow any ordinance within one year. The commissioner proposes most legislation but private members' bills are allowed, except for money matters, which are the prerogative of the commissioner. Besides draft legislation, the council gives considerable time to policy papers in which the commissioner or other executive committee members seek advice or authority to take a particular course of action.

Parliament approved legislation in March 1979 for the political development of Northwest Territories. Amendments to the Northwest Territories Act allowed the NWT council to set its own number of members, as long as there is a minimum of 15 and no more than 25 members. Previously Parliament had authority to set the number of members, 15 since 1974. Council has since set the number at 22; an election for the enlarged number was held in October 1979. The council selects its speaker from among its members; previously the commissioner was the presiding officer. Council also nominates up to seven of its members to the executive committee along with the commissioner, who is chairman, and the deputy commissioner. This committee advises the commissioner on broad policy matters and acts as a consultative body for him. Each elected executive committee member is responsible for one or more departments of the territorial government.

The justice minister is the attorney general of Northwest Territories under the Criminal Code of Canada, with responsibility for criminal but not for civil matters or the constitution or organization of the courts (see Chapter 2). Law enforcement is provided by the Royal Canadian Mounted Police.

The commissioner, council and council staff of Northwest Territories are given in Appendix 8.

Local government

3.7

Local government in Canada comprises all government entities created by the provinces and territories to provide services that can be more effectively discharged through local control. Broadly speaking, local government services are identified in terms of seven main functions: protection, transportation, environmental health, environmental development, recreation, community services and education. Local government may also operate such facilities as public transit and the supply of electricity and gas. Education is normally administered separately from the other local functions.

Under the BNA Act local government was made a responsibility of the provincial legislatures, a responsibility extended to the territories when their governments were constituted in their present forms. The unit of local government, apart from the school board, is usually the municipality which is incorporated as a city, town, village, township or other designation. The powers and responsibilities of municipalities are delegated to them by statutes passed by their respective provincial or territorial legislatures.

An increasing number of special agencies or joint boards and commissions have been created to provide certain services for groups of municipalities. Local government revenue has been supplemented by provincial grants, either unconditional or for specific purposes. Certain functions traditionally assigned to local government have been assumed in whole or in part by the provinces. Besides encouraging the amalgamation of small units, the provinces have established new levels of local government to provide services which can be better discharged at a regional level. Second-tier local governments now cover the whole of British Columbia and much of Ontario. In Quebec three regional governments have been established.

The major revenue source available to local government is the taxation of real property, supplemented by taxation of personal property, businesses and amusements.

Revenue is also derived from licences, permits, rents, concessions, franchises, fines and surplus funds from municipal enterprises.

The structure of local government in Canada varies widely. Table 3.7 gives the type of municipal organization in each province and territory.

Newfoundland has 308 incorporated areas: two cities, 168 towns, 139 communities and one metropolitan area. Towns and rural districts have elected councils and local improvement districts have appointed trustees. Local government communities in smaller settlements have limited powers and functions. There are no rural municipalities in the usual sense.

St. John's, the capital of Newfoundland, was one of the earliest sites of New World settlement. The St. John's metropolitan area covers the area adjoining and surrounding the city of St. John's and the town of Mount Pearl and is similar in organization to a local improvement district.

Prince Edward Island has one city, eight towns and 30 villages, all of which are incorporated. Thirty-nine community improvement committees provide a measure of local services to the unincorporated areas of the province. Charlottetown, the capital, was first incorporated in 1855. Five regional administrative units provide elementary and secondary education for the province, with the individual boards elected by residents of the units.

Nova Scotia is divided into 18 counties; 12 constitute separate municipalities and the remaining six are each divided into two municipalities, making a total of 24 rural municipalities. Within these municipalities are 25 incorporated villages that provide limited services. Three cities and 38 towns, although located within counties or districts, are entirely independent of them except as to joint expenditures. There is no part of the province that is not municipally organized.

Halifax, capital of Nova Scotia and the largest metropolitan area in the Atlantic provinces, is governed by an elected council consisting of a mayor and 10 aldermen, one for each of 10 wards.

New Brunswick municipal organization includes six cities, 21 towns and 88 villages. The remainder of the province is not municipally organized and is administered by the provincial government. There are 224 unincorporated local service districts which are not municipal organizations but were established to provide services of a municipal nature.

Fredericton is the capital of New Brunswick and the third largest city. Saint John is the largest city and Moncton is second.

Quebec. The more densely settled areas comprising about one-third of the province are municipally organized; the remainder is governed by the province as "territories". The organized area is divided into three metropolitan and regional municipalities and 72 municipal counties, administered by a county corporation. Cities and towns are excluded from the county system for political and administrative purposes except for certain joint expenditures. The remaining municipal corporations and the unorganized territory within counties fall under the county system. Counties have no direct powers of taxation; funds to finance services in their jurisdiction are provided by their component municipalities. In 1980 there were 1,513 municipalities comprising 65 cities, 192 towns, 248 villages, and 1,008 rural municipalities, including parishes, townships, united townships and municipal organizations without designation. Major municipal consolidations began in 1965 with the fusion of the 14 municipalities on Île Jésus into the new city of Laval. In 1970, the Montreal and Quebec Urban Communities and the Outaouais Regional Community were established with integration of services to be staged gradually.

Quebec is the capital city and Montreal is the incorporated city with the largest population.

Ontario. In Ontario, slightly more than 10% of the area includes 95% of the total population and is municipally organized; the remainder is under direct provincial administration. The settled section is divided into one metropolitan municipality, 10

regional municipalities, one district municipality, 27 counties and regional districts. There are 45 cities including the five boroughs of Metropolitan Toronto, 144 towns, 120 villages, 476 townships and 13 improvement districts. The Municipality of Metropolitan Toronto, in existence since January 1954, encompasses one city and five boroughs and is responsible for assessments, police, water supply, sewerage, metropolitan road systems and planning. The regional municipalities of Durham, Haldimand–Norfolk, Halton, Hamilton–Wentworth, Niagara, Ottawa–Carleton, Peel, Sudbury, Waterloo and York have replaced county administrations and assumed certain responsibilities over all municipalities within their boundaries. The District Municipality of Muskoka was incorporated in January 1971 to assume responsibilities, similar to those of the regional municipalities, over the reorganized municipalities of the former district of Muskoka. This form of regional government is contemplated in other areas. Each county, although an incorporated municipality, comprises the towns (with the exception of five separated towns), villages and townships within it. Some municipalities are located outside the counties in areas called districts. These districts in Western and Northern Ontario are not municipal entities.

Toronto, the capital of Ontario, had been the capital of Upper Canada before Confederation. Hamilton is the second largest incorporated city in Ontario, followed in population size by Ottawa, the national capital.

Manitoba has five cities, 35 towns, 40 villages and 105 rural municipalities. There are also 18 local government districts which perform the same general functions as municipalities. They are administered by administrators who act, in most districts, on the advice of elected councils, but are subject to the final authority of the minister of municipal affairs.

In Manitoba, the capital city of Winnipeg and 11 surrounding municipalities, after 12 years under the partial central authority of the Metropolitan Corporation of Greater Winnipeg, were amalgamated into a single city in January 1972.

Saskatchewan has 11 cities, 135 towns, 346 villages and 299 rural municipalities. The area so organized consists of most of the southern part of the province, the remainder of this portion being administered by the province through 10 unincorporated local improvement districts. The northern part is sparsely populated and some municipal services are provided by the province through the operation of the Northern Administration District.

Regina, the capital, is the largest city in Saskatchewan, and Saskatoon is second.

Alberta has 11 cities, 107 towns, 167 villages, 18 municipal districts and 30 counties. The counties administer schools in addition to municipal services. There are 21 improvement districts and three special areas administered by the Special Areas Board.

Edmonton, the capital, was incorporated in 1904. Calgary was founded in 1875 by the mounted police and incorporated as a city in 1893.

British Columbia. In 1967, the government of British Columbia instituted regional government. By January 1972, 28 regional districts had been established. These regional districts are assuming responsibility for certain services from municipalities within their boundaries as well as providing services to previously unorganized areas. There are 33 cities, 11 towns, 58 villages and 38 districts. Districts are mostly rural although some adjacent to the principal cities of Vancouver and Victoria are largely urban in character. Unincorporated local districts have been set up to provide certain municipal services.

Victoria, the capital, on the southeastern tip of Vancouver Island, was incorporated in 1862. The largest city, Vancouver, was incorporated in 1886.

Yukon. There are two cities, one town and five local improvement districts. The local improvement districts, although incorporated, are developmental forms of local government. Whitehorse became the capital in April 1953 when the seat of government was moved from Dawson City.

Northwest Territories includes one city, four towns, two villages and 20 hamlets. The hamlets, although incorporated, are developmental forms of local government. Yellowknife on the north arm of Great Slave Lake was named the capital in 1967.

Sources

- 3.1 - 3.4 Government Organization Directorate, Privy Council Office; English Journals Branch, House of Commons; Law Clerk and Parliamentary Counsel of the Senate, House of Commons Division, Department of Supply and Services; Office of the Chief Electoral Officer.
- 3.5.1 Communications Division, Treasury Board.
- 3.5.2 Communications, Office of the Auditor General of Canada.
- 3.5.3 Communications Division, Treasury Board.
- 3.5.4 Information Services Directorate, Corporate Systems and Services Branch, Public Service Commission.
- 3.5.5 Policy Co-ordination Director, Department of Indian Affairs and Northern Development.
- 3.5.6 Government Organization Directorate, Privy Council Office.
- 3.5.7 Communications Division, Treasury Board.
- 3.5.8 Publications Section, Canadian Unity Information Office.
- 3.6 Supplied by provincial and territorial governments.
- 3.7 Public Finance Division, Social Statistics Field, Statistics Canada; provincial and territorial governments.

Tables

. . . not available
 . . . not appropriate or not applicable
 — nil or zero
 - - too small to be expressed

e estimate
p preliminary
r revised
certain tables may not add due to rounding

3.1 Duration and sessions of Parliaments, 1965-80

Order of Parliament	Session	Date of opening	Date of prorogation	Days of session	Sitting days of House of Commons	Date of election, writs returnable, dissolution, and length of Parliament ^{1,2}
27th Parliament	{ 1st 2nd	Jan. 18, 1966 May 8, 1967	May 8, 1967 Apr. 23, 1968	476 ^a 352 ⁷	250 155	Nov. 8, 1965 ^a Dec. 9, 1965 ^a Apr. 23, 1968 ^a 867 d
28th Parliament	{ 1st 2nd 3rd 4th	Sept. 12, 1968 Oct. 23, 1969 Oct. 8, 1970 Feb. 17, 1972	Oct. 22, 1969 Oct. 7, 1970 Feb. 16, 1972 Sept. 1, 1972	406 ^a 350 ⁹ 497 ¹⁰ 198 ¹¹	197 155 244 91	June 25, 1968 ^a July 25, 1968 ^a Sept. 1, 1972 ^a 1,500 d
29th Parliament	{ 1st 2nd	Jan. 4, 1973 Feb. 27, 1974	Feb. 26, 1974 May 9, 1974	419 ¹² 72	206 50	Oct. 30, 1972 ^a Nov. 20, 1972 ^a May 9, 1974 ^a 536 d
30th Parliament	{ 1st 2nd 3rd 4th	Sept. 30, 1974 Oct. 12, 1976 Oct. 18, 1977 Oct. 11, 1978	Oct. 12, 1976 Oct. 17, 1977 Oct. 10, 1978 Mar. 26, 1979	744 ¹² 371 ¹⁴ 358 ¹⁵ 167 ¹⁶	343 175 151 98	July 8, 1974 ^a July 31, 1974 ^a Mar. 26, 1979 ^a 1,700 d
31st Parliament	{ 1st	Oct. 9, 1979	Dec. 14, 1979	67	49	May 22, 1979 ^a June 11, 1979 ^a Dec. 14, 1979 ^a 187 d
32nd Parliament	{ 1st	Apr. 14, 1980	...	...	...	Feb. 18, 1980 ^a Mar. 10, 1980 ^a

¹The ordinary legal limit of duration for each Parliament is five years.

²Duration of Parliament in days. The life of a Parliament is counted from the date of return of election writs to the date of dissolution, both days inclusive (BNA Act, Sect. 50).

³Date of general election.⁴Writs returnable.⁵Dissolution of Parliament.

¹Includes Easter adjournment from Apr. 6, 1966 to Apr. 19, 1966; two summer adjournments from July 14, 1966 to Aug. 29, 1966 and Sept. 9, 1966 to Oct. 5, 1966; Christmas adjournment from Dec. 21, 1966 to Jan. 9, 1967 and Easter adjournment from Mar. 22, 1967 to Apr. 3, 1967.

⁷Includes summer adjournment from July 7, 1967 to Sept. 25, 1967; Christmas adjournment from Dec. 21, 1967 to Jan. 22, 1968; and Easter (Liberal Convention) Mar. 28, 1968 to Apr. 23, 1968.

*Includes Christmas adjournment from Dec. 20, 1968 to Jan. 14, 1969; Easter adjournment from Apr. 2, 1969 to Apr. 14, 1969; and summer adjournment from July 25, 1969 to Oct. 22, 1969.

*Includes Christmas adjournment from Dec. 19, 1969 to Jan. 12, 1970; Easter adjournment from Mar. 25, 1970 to Apr. 6, 1970; and summer adjournment from June 26, 1970 to Oct. 5, 1970.

¹Includes Christmas adjournment from Dec. 18, 1970 to Jan. 11, 1971; Easter adjournment from Apr. 7, 1971 to Apr. 19, 1971; summer adjournment from June 30, 1971 to Sept. 7, 1971; Christmas adjournments from Dec. 23, 1971 to Dec. 28, 1971 and Dec. 31, 1971 to Jan. 12, 1972.

¹¹Includes Easter adjournment from Mar. 29, 1972 to Apr. 13, 1972; and summer adjournment from July 7, 1972 to Aug. 31, 1972.

²¹Includes Easter adjournment from Apr. 19, 1973 to May 6, 1973; summer adjournments from July 27, 1973 to Aug. 30, 1973 and Sept. 21, 1973 to Oct. 15, 1973; Christmas adjournments from Dec. 22, 1973 to Jan. 2, 1974 and Jan. 14, 1974 to Feb. 26, 1974.

*Includes Christmas adjournment from Dec. 20, 1974 to Jan. 22, 1975; Easter adjournment from Mar. 27, 1975 to Apr. 7, 1975; summer adjournment from July 31, 1975 to Oct. 13, 1975; Christmas adjournment from Dec. 20, 1975 to Jan. 26, 1976; Easter adjournment

adjournment from July 31, 1975 to Oct. 15, 1975; Christmas adjournment from Dec. 20, 1975 to Jan. 20, 1976; Easter adjournment from Apr. 14, 1976 to Apr. 26, 1976; and summer adjournment from July 16, 1976 to Oct. 12, 1976.

¹⁴Includes Christmas adjournment from Dec. 22, 1976 to Jan. 24, 1977; Easter adjournment from Apr. 6, 1977 to Apr. 18, 1977; summer adjournments from July 25, 1977 to Aug. 4, 1977; Aug. 5, 1977 to Aug. 9, 1977 and Aug. 9, 1977 to Oct. 17, 1977.

¹⁵Includes Christmas adjournment from Dec. 20, 1977 to Jan. 23, 1978; Easter adjournment from Mar. 22, 1978 to Apr. 3, 1978; and summer adjournment from June 30, 1978 to Oct. 10, 1978.

¹⁵Includes Christmas adjournment from Dec. 22, 1978 to Jan. 23, 1979.

3.2 Representation in the Senate since Confederation, 1867

[illegible]

3.2 Representation in the Senate since Confederation, 1867 (concluded)

Province or territory	1867	1870	1871	1873	1882	1887	1892	1903	1905	1915-1948	1949-1974	1975-1980
Western provinces	...	2	5	5	6	8	9	11	15	24	24	24
Manitoba	...	2	2	2	3	3	4	4	4	6	6	6
British Columbia	3	3	3	3	3	3	3	6	6	6
Saskatchewan	2	2	4	{ 4	6	6	6
Alberta	6	6	6
Territories	2
Yukon	1
Northwest Territories	1
Total	72	74	77	77	78	80	81	83	87	96	102	104

3.3 Representation in the House of Commons, as at federal general elections 1867-1980

Province or territory	1867	1872	1874 1878	1882	1887 1891	1896 1900	1904	1908 1911	1917 1921	1925 1930	1935 1940 1945	1949	1953 1957 1958 1962 1963 1965	1968 1972 1974	1979 1980
Ontario	82	88	88	92	92	92	86	86	82	82	82	83	85	88	95
Quebec	65	65	65	65	65	65	65	65	65	65	65	73	75	74	75
Nova Scotia	19	21	21	21	21	20	18	18	16	14	12	13	12	11	11
New Brunswick	15	16	16	16	16	14	13	13	11	11	10	10	10	10	10
Manitoba	...	4	4	5	5	7	10	10	15	17	17	16	14	13	14
British Columbia	...	6	6	6	6	6	7	7	13	14	16	18	22	23	28
Prince Edward Island	...	...	6	6	6	5	4	4	4	4	4	4	4	4	4
Saskatchewan	...	...	...	...	4	4	10	{ 10	16	21	21	20	17	13	14
Alberta	...	...	...	...	...	...	...	{ 7	12	16	17	17	17	19	21
Yukon	...	...	...	...	...	...	...	...	...	...	...	...	{ 1	1	1
Mackenzie River	...	...	...	...	...	...	1	1	1	1	1	1	{ 1	1	2
NWT ¹	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Newfoundland	...	...	...	...	...	...	...	...	...	...	...	7	7	7	7
Total	181	200	206	211	215	213	214	221	235	245	245	262	265	264	282

¹Electoral district of Northwest Territories in 1963, 1965, 1968, 1972, 1974, 1979 and 1980.

3.4 Electoral districts, voters on the list, votes polled and names and addresses of members of the House of Commons as elected at the thirty-first general election, May 22, 1979

Province and electoral district	Popu- lation, Census 1976	Voters on list	Total votes polled (incl. rejec- tions)	Votes polled by member	Name of member	Postal address	Party affili- ation ¹
NEWFOUNDLAND (7 members)							
Bonavista — Trinity — Conception	73,990	47,730	24,943	11,314	D. Rooney	Lower Island Cove	Lib.
Burin — St. George's	63,332	37,307	21,471	14,960	D.C. Jamieson	Swift Current	Lib.
Gander — Twillingate	76,698	45,630	24,779	15,408	G.S. Baker	Gander	Lib.
Grand Falls — White Bay — Labrador	81,331	44,744	29,814	13,639	W. Rompkey	St. John's	Lib.
Humber — Port au Port — St. Barbe	81,282	49,224	30,824	15,872	F. Faour	Corner Brook	NDP
St. John's East	91,861	56,880	34,935	20,262	J.A. McGrath	St. John's	PC
St. John's West	89,231	57,215	36,505	17,236	J.C. Crosbie	St. John's East	PC
PRINCE EDWARD ISLAND (4 members)							
Cardigan	29,249	20,137	17,181	8,219	W. MacDonald	Orwell Cove	PC
Egmont	30,380	20,042	15,927	8,861	D. MacDonald	Alberton	PC
Hillsborough	27,800	19,459	15,358	8,338	T. McMillan	Charlottetown	PC
Malpeque	30,800	20,694	16,665	8,729	M. Gass	Cornwall	PC

3.4 Electoral districts, voters on the list, votes polled and names and addresses of members of the House of Commons as elected at the thirty-first general election, May 22, 1979 (continued)

Province and electoral district	Population, Census 1976	Voters on list	Total votes polled (incl. rejections)	Votes polled by member	Name of member	Postal address	Party affiliation ¹
NOVA SCOTIA (11 members)							
Annapolis Valley — Hants	80,360	54,621	40,286	20,103	J.P. Nowlan	Wolfville	PC
Cape Breton — East							
Richmond	64,503	42,836	33,861	15,269	A. Hogan	Glace Bay	NDP
Cape Breton Highlands — Canso	64,937	43,573	35,685	17,047	A.J. MacEachen	Ottawa	Lib.
Cape Breton — The Sydneys	67,137	45,128	35,468	12,857	R. MacLellan	Sydney	Lib.
Central Nova	63,479	43,456	33,510	18,907	E.M. MacKay	Lorne	PC
Cumberland — Colchester	77,685	54,219	41,050	22,827	R.C. Coates	Amherst	PC
Dartmouth — Halifax East	94,275	63,129	44,445	21,441	J.M. Forrestall	Porter's Lake	PC
Halifax	76,572	54,630	41,189	16,570	G. Cooper	Halifax	PC
Halifax West	97,968	66,953	48,316	22,714	H. Crosby	Halifax	PC
South Shore	72,305	51,889	36,662	20,867	L.R. Crouse	Lunenburg	PC
South West Nova	69,350	47,214	37,274	16,512	C. Haliburton	Digby	PC
NEW BRUNSWICK (10 members)							
Carleton — Charlotte	64,226	43,909	30,006	16,603	F.A. McCain	Florenceville	PC
Fundy — Royal	76,864	53,920	40,654	19,135	R. Corbett	Gagetown	PC
Gloucester	68,105	44,999	35,872	18,387	H. Breau	Tracadie	Lib.
Madawaska — Victoria	55,824	37,162	25,848	15,851	E. Corbin	Edmundston	Lib.
Moncton	88,512	61,777	48,555	20,940	G.F. McCauley	Riverview	Lib.
Northumberland — Miramichi	56,095	35,684	27,207	12,893	M.A. Dionne	Millerton	Lib.
Restigouche	53,540	35,154	26,841	14,840	M. Harquail	Campbellton	Lib.
Saint John	74,063	48,577	33,828	13,989	E. Ferguson	Saint John	PC
Westmorland — Kent	58,176	39,640	31,077	19,695	R.-A. LeBlanc	Memramcook	Lib.
York — Sunbury	81,845	55,873	39,672	21,722	J.R. Howie	Fredericton	PC
QUEBEC (75 members)							
Abitibi	94,431	76,632	47,851	21,387	A. Caouette	Val-d'Or	SC
Argenteuil	63,655	45,715	34,560	22,043	R. Gourd	Mirabel	Lib.
Beauce	74,739	53,476	43,624	24,770	F. Roy ^a	St-Georges-Ouest	SC
Beauharnois — Salaberry	75,371	53,612	41,533	26,048	G. Laniel	Valleyfield	Lib.
Bellechasse	80,052	56,317	40,642	18,702	A. Lambert	Berthier-sur-Mer	SC
Berthier — Maskinongé	66,367	49,984	38,397	21,725	A. Yanakis	St-Gabriel-de-Brandon	Lib.
Blainville — Deux-Montagnes	92,001	66,697	52,177	34,885	F. Fox	St-Eustache	Lib.
Bonaventure — Îles-de-la-Madeleine	59,505	39,346	29,329	15,777	R. Bujold	St-Jules-de-Caspédia	Lib.
Chamby	97,513	66,606	52,640	32,952	R. Dupont	St-Hubert	Lib.
Champlain	74,956	54,622	42,231	22,256	M. Veillette	Repentigny	Lib.
Charlesbourg	118,069	81,790	63,072	40,796	P. Bussi��res	Charlesbourg	Lib.
Charlevoix	73,215	48,256	31,871	18,031	C. Lapointe	Tadoussac	Lib.
Ch��teau‐guay	79,645	55,419	41,235	27,485	I. Watson	Laprairie	Lib.
Chicoutimi	81,744	45,045	33,919	16,605	M. Dionne	Chicoutimi	Lib.
Drummond	71,051	50,653	40,624	22,989	Y. Pinard	Drummondville	Lib.
Frontenac	68,830	47,397	37,308	17,024	L. Corriveau	Thetford Mines	Lib.
Gasp��	59,958	39,436	28,884	14,830	J.-A. Cyr	Chandler	Lib.
Gatineau	98,058	64,124	47,962	34,234	R. Cousineau	Gatineau	Lib.
Hull	86,753	56,777	43,649	30,413	G. Isabelle	Aylmer	Lib.
Joliette	83,086	62,202	47,989	23,960	R. LaSalle	Joliette	PC
Jonqu��re	66,697	46,777	35,420	21,969	G. Marceau	Jonqu��re	Lib.
Kamouraska — Rivi��re-du-Loup	68,939	49,123	35,217	15,328	R. Gendron	Rivi��re-du-Loup	Lib.
Labelle	83,413	62,452	46,063	29,614	M. Dupras	Mont-Gabriel	Lib.
Lac-Saint-Jean	56,083	49,270	36,573	18,978	M. Lessard	Alma	Lib.
Langelier	71,365	53,909	39,458	25,931	J.G. Lamontagne	Quebec	Lib.
Laprairie	102,659	70,351	57,577	39,410	P. Deniger	Brossard	Lib.
L��vis	95,021	72,628	55,265	31,753	R. Guay	Lauzon	Lib.
Longueuil	122,429	79,020	57,509	34,207	J. Olivier	Longueuil	Lib.
Lotbini��re	76,021	54,092	42,450	20,083	R. Janelle	Victoriaville	SC
Louis-H��bert	102,227	73,636	58,611	37,908	D. Dawson	Ste-Foy	Lib.
Manicouagan	82,161	53,039	31,889	18,528	A. Maltais	Sept-��les	Lib.
Matap��dia — Matane	57,739	40,849	27,603	19,728	P. De Ban��	Quebec	Lib.
M��gantic — Compton — Stanstead	73,244	50,670	37,762	19,309	C. Tessier	Cte-M��gantic	Lib.
Missisquoi	70,409	49,118	38,280	18,198	H. Graffey	Knowlton	PC
Montmorency	78,219	56,261	42,834	26,870	L. Duclos	Ste-Petronille	Lib.
Pontiac — Gatineau — Labelle	67,103	45,826	32,080	20,253	T.H. Lefebvre	Davidson	Lib.
Portneuf	73,957	54,775	40,228	25,297	R. Dion	St-Raymond	Lib.

3.4 Electoral districts, voters on the list, votes polled and names and addresses of members of the House of Commons as elected at the thirty-first general election, May 22, 1979 (continued)

Province and electoral district	Population, Census 1976	Voters on list	Total votes polled (incl. rejections)	Votes polled by member	Name of member	Postal address	Party affiliation ¹
QUEBEC (concluded)							
Québec-Est	84,509	59,209	43,963	28,365	G. Duquet	Quebec	Lib.
Richelieu	77,855	57,469	46,014	25,264	J.-L. Leduc	Sorel	Lib.
Richmond	63,498	43,569	33,630	15,135	A. Tardif	Asbestos	Lib.
Rimouski	74,378	52,613	37,573	16,821	E. Allard	Rimouski	SC
Roberval	64,832	45,391	34,207	15,582	C.-A. Gauthier	Mistassini	SC
Saint-Hyacinthe	78,636	57,291	44,384	23,666	M. Ostiguy	St-Thomas D' Aquin	Lib.
Saint-Jean	81,655	57,885	45,082	28,496	P.-A. Massé	Saint-Jean	Lib.
Saint-Maurice	68,532	50,320	38,921	27,243	J. Chretien	Shawinigan	Lib.
Shelford	86,788	61,676	49,789	25,287	J. Lapierre	Granby	Lib.
Sherbrooke	80,486	56,618	42,308	25,110	Irénée Pelletier	North Hatley	Lib.
Témiscamingue	80,015	52,930	39,556	16,147	H. Touisinant	Palmarolle	Lib.
Terrebonne	103,213	77,811	57,076	34,839	J.R. Comtois	Repentigny	Lib.
Trois-Rivières	71,477	52,631	38,750	23,311	C.G. Lajoie	Cap-de-la-Madeleine	Lib.
Verchères	98,491	73,668	59,256	36,542	B. Loisele	Beloil	Lib.
Island of Montreal and Ile-Jesus							
Bourassa	101,535	65,657	48,942	29,929	C. Rossi	Montreal North	Lib.
Dollard	105,595	67,413	56,860	43,294	L.R. Desmarais	Montreal	Lib.
Duvernay	98,164	64,782	52,774	35,270	J. Demers	Laval	Lib.
Gamelin	86,806	59,889	45,909	30,567	A. Portelance	St-Charles-sur-Richelieu	Lib.
Hochelaga — Maisonneuve	79,433	51,034	35,100	21,059	S. Joyal	Montreal	Lib.
Lachine	86,500	54,578	47,384	29,846	R. Blaker	Pointe-Claire	Lib.
LaSalle	94,818	63,108	49,461	36,560	J. Campbell	LaSalle	Lib.
Laurier	76,488	42,884	29,404	17,366	D. Berger	Montreal	Lib.
Laval	102,626	69,235	56,166	40,067	M. Roy	Laval-des-Rapides	Lib.
Laval-des-Rapides	92,983	65,102	51,904	36,387	Jeanne Sauvé	Montreal	Lib.
Mercier	93,177	61,752	46,459	26,784	Céline Hervieux-Payette	Repentigny	Lib.
Mount Royal	90,372	60,745	51,037	43,202	P.-E. Trudeau ²	Ottawa	Lib.
Notre-Dame-de-Grâce	89,507	56,754	45,956	33,011	W. Allmand	Montreal	Lib.
Outremont	87,132	51,819	40,384	28,710	M. Lalonde	Montreal	Lib.
Papineau	80,763	49,952	35,227	23,619	A. Ouellet	Ottawa	Lib.
Rosemont	82,543	54,718	40,305	28,116	C.-A. Lachance	Montreal	Lib.
Saint-Denis	88,648	51,669	41,829	30,552	M. Prud'homme	Montreal	Lib.
Saint-Henri-Westmount	85,202	57,129	44,421	31,486	D.J. Johnston	Montreal	Lib.
Saint-Jacques	72,772	46,497	30,305	20,520	J. Guibault	Montreal	Lib.
Saint-Leonard — Anjou	121,897	77,813	60,147	45,582	Monique Bégin	Montreal	Lib.
Sainte-Marie	77,435	49,381	34,063	19,612	J.-C. Malépart	Montreal	Lib.
Saint-Michel	86,078	54,053	41,668	29,046	Thérèse Killens	Montreal	Lib.
Vaudreuil	108,866	74,393	60,092	41,508	H.T. Herbert	Hudson	Lib.
Verdun	84,055	55,600	42,395	30,178	R. Savard	Verdun	Lib.
ONTARIO (95 members)							
Algoma	71,145	48,112	34,044	15,277	M. Foster	Desbarats	Lib.
Brampton — Georgetown	125,589	80,846	65,463	31,042	J. McDermid	Brampton	PC
Brant	99,099	67,790	49,825	20,908	D. Blackburn	Brantford	NDP
Bruce — Grey	73,771	51,121	40,691	21,219	G.M. Gurbin	Kincardine	PC
Burlington	104,314	69,194	56,952	32,225	W. Kempling	Dundas	PC
Cambridge	77,427	47,720	37,703	16,337	C. Speyer	Cambridge	PC
Cochrane	62,195	38,828	29,110	12,889	K. Penner	Kapuskasing	Lib.
Durham — Northumberland	76,576	51,913	41,208	21,502	A. Lawrence	Janetville	PC
Elgin	69,092	45,463	34,891	21,181	J. Wise	St. Thomas	PC
Erie	70,161	45,292	34,156	15,500	G. Fretz	Ridgeway	PC
Essex — Kent	71,366	45,531	32,583	14,457	R. Daudlin	Kingsville	Lib.
Essex — Windsor	102,295	63,906	46,276	20,373	E.F. Whelan	Amherstburg	Lib.
Glengarry — Prescott — Russell	74,796	52,401	41,691	27,106	D. Ethier	Dalkeith	Lib.
Grey — Simcoe	71,254	49,660	38,180	20,825	G. Mitges	Owen Sound	PC
Guelph	80,834	54,911	43,457	18,149	A. Fish	Guelph	PC
Haldimand — Norfolk	89,252	59,554	46,035	22,655	B. Bradley	Dunnville	PC
Halton	102,053	64,916	54,405	28,850	O. Jelinek	Toronto	PC
Hamilton East	84,205	51,529	38,640	14,579	J.C. Munro	Hamilton	Lib.
Hamilton Mountain	96,482	63,333	51,351	21,348	D.M. Beattie	Hamilton	PC
Hamilton — Wentworth	80,608	53,493	42,485	22,369	G. Scott	Ottawa	PC
Hamilton West	87,522	57,539	42,682	19,661	L.M. Alexander	Hamilton	PC
Hastings — Frontenac	67,804	45,320	34,925	17,537	W. Vankoughnet	Napanee	PC
Huron — Bruce	67,496	45,506	35,776	21,122	R.E. McKinley	Zurich	PC
Kenora — Rainy River	75,392	47,402	33,682	11,793	J.M. Reid	Kenora	Lib.
Kent	78,921	53,200	34,937	18,007	J.R. Holmes	Wallaceburg	PC
Kingston and the Islands	89,243	65,016	44,781	21,277	Flora MacDonald	Kingston	PC
Kitchener	106,133	69,500	52,113	23,230	J. Reimer	Kitchener	PC
Lambton — Middlesex	75,269	49,396	38,841	18,770	S. Fraleigh	Forest	PC
Lanark — Renfrew — Carleton	72,786	51,298	40,620	24,277	P. Dick	Kanata	PC
Leeds — Grenville	78,604	55,014	42,645	24,127	T. Cossitt	Brockville	PC
Lincoln	90,700	60,738	48,421	19,612	K. Higson	Grimsby	PC
London East	85,391	54,503	38,625	16,331	C. Turner	London	Lib.
London — Middlesex	74,714	48,744	37,262	14,339	N. Elliott	Thorndale	PC
London West	106,282	77,733	59,871	25,258	J. Buchanan	London	Lib.

3.4 Electoral districts, voters on the list, votes polled and names and addresses of members of the House of Commons as elected at the thirty-first general election, May 22, 1979 (continued)

Province and electoral district	Population, Census 1976	Voters on list	Total votes polled (incl. rejections)	Votes polled by member	Name of member	Postal address	Party affiliation ¹
ONTARIO (concluded)							
Mississauga North	138,576	85,630	68,969	30,531	A. Jupp	Mississauga	PC
Mississauga South	111,441	67,902	55,018	26,802	D. Blenkarn	Mississauga	PC
Nepean — Carleton	108,336	73,725	61,787	36,717	W. Baker	Nepean	PC
Niagara Falls	81,908	54,567	40,634	16,916	J. Froese	Niagara-on-the-Lake	PC
Nickel Belt	90,799	53,320	41,097	17,772	J. Rodriguez	Capreol	NDP
Nipissing	69,159	44,556	34,031	15,184	J.-J. Blais	North Bay	Lib.
Northumberland	75,974	50,776	38,028	22,536	G. Hees	Cobourg	PC
Ontario	87,803	60,797	50,216	22,583	S. Fennell	Pickering	PC
Oshawa	107,023	71,992	57,034	29,090	E. Broadbent ²	Oshawa	NDP
Ottawa-Carleton	119,748	81,455	69,205	33,972	J.-L. Pepin	Ottawa	Lib.
Ottawa Centre	83,371	63,400	49,579	19,758	J. Evans	Ottawa	Lib.
Ottawa-Vanier	84,309	57,970	44,766	28,098	J.-R. Gauthier	Ottawa	Lib.
Ottawa West	95,479	67,302	55,419	24,981	K. Binks	Ottawa	PC
Oxford	85,337	56,376	42,929	23,592	B. Halliday	Tavistock	PC
Parry Sound — Muskoka	69,668	48,432	36,656	19,223	S. Darling	Burks Falls	PC
Perth	66,279	44,823	32,659	19,019	W. Jarvis	Stratford	PC
Peterborough	91,656	63,641	50,076	22,195	W. Domm	Peterborough	PC
Prince Edward — Hastings	75,447	52,355	39,753	21,088	J.R. Ellis	Belleville	PC
Renfrew — Nipissing — Pembroke	82,755	52,689	41,322	20,286	L. Hopkins	Petawawa	Lib.
St. Catharines	102,420	67,731	51,068	23,444	J. Reid	St. Catharines	PC
Sarnia	81,342	52,568	40,205	15,990	W. Campbell	Sarnia	PC
Sault Ste Marie	63,615	42,440	32,590	12,089	C. Symes	Sault Ste Marie	NDP
Simcoe North	80,718	54,409	41,894	19,388	D. Lewis	Orillia	PC
Simcoe South	92,549	59,809	46,597	25,483	R. Stewart	Barrie	PC
Stormont — Dundas	85,366	58,686	43,869	20,581	E. Lumley	Cornwall	Lib.
Sudbury	86,950	54,549	42,009	20,634	J. Jerome ⁴	Sudbury	Lib.
Thunder Bay — Atikokan	68,571	45,186	34,357	11,921	P.E. McRae	Thunder Bay	Lib.
Thunder Bay — Nipigon	68,660	48,048	35,075	15,674	R.K. Andras	Thunder Bay	Lib.
Timiskaming	58,342	37,053	28,680	11,595	A. Peters	New Liskeard	NDP
Timmins — Chapleau	64,004	41,599	31,681	13,577	R. Chénier	South Porcupine	PC
Victoria — Haliburton	82,355	59,259	45,802	26,624	W.E. Scott	Kimnount	PC
Waterloo	105,569	69,282	51,929	23,837	W. McLean	Waterloo	PC
Welland	80,922	55,155	43,488	16,025	G. Parent	St. Catharines	Lib.
Wellington — Dufferin — Simcoe	81,988	53,923	41,853	25,807	P. Beatty	Fergus	PC
Windsor — Walkerville	82,331	54,330	41,174	17,561	M. MacGuigan	Windsor	Lib.
Windsor West	82,902	51,540	35,283	16,943	H. Gray	Windsor	Lib.
York North	108,704	72,457	59,846	29,011	J. Gamble	Markham	PC
York Peel	99,027	65,505	51,538	29,081	S. Stevens	King City	PC
Metropolitan Toronto							
Beaches	80,008	47,139	37,416	12,840	R. Richardson	Toronto	PC
Broadview — Greenwood	79,660	43,015	33,524	13,187	R. Rae	Toronto	NDP
Davenport	77,236	28,805	23,161	12,760	C.L. Caccia	Toronto	Lib.
Don Valley East	109,824	64,091	53,921	25,352	S. Wakim	Willowdale	PC
Don Valley West	88,884	61,506	52,726	28,427	J. Bosley	Toronto	PC
Eglinton — Lawrence	89,957	55,433	45,391	19,270	R. de Corneille	Willowdale	Lib.
Etobicoke Centre	103,467	71,447	61,691	31,498	M. Wilson	Etobicoke	PC
Etobicoke — Lakeshore	88,276	57,138	46,025	15,791	W.K. Robinson	Toronto	Lib.
Etobicoke North	105,366	63,580	52,095	20,534	R. MacLaren	Toronto	Lib.
Parkdale — High Park	83,321	52,558	40,833	15,281	J. Flis	Etobicoke	PC
Rosedale	81,020	53,493	39,671	18,594	D. Crombie	Toronto	PC
St. Paul's	81,109	53,704	43,727	19,161	R. Atkey	Toronto	PC
Scarborough Centre	89,037	52,801	43,269	18,688	Diane Stratas	Scarborough	PC
Scarborough East	93,641	55,414	46,005	21,381	G. Gilchrist	Scarborough	PC
Scarborough West	87,298	54,068	43,298	15,697	W. Wightman	Toronto	PC
Spadina	78,052	38,248	29,386	12,542	P. Stollery	Toronto	Lib.
Trinity	82,294	27,459	21,458	10,206	Aideen Nicholson	Toronto	Lib.
Willowdale	88,248	60,320	50,093	22,238	R. Jarvis	Toronto	PC
York Centre	102,597	52,217	41,052	20,859	R. Kaplan	Toronto	Lib.
York East	101,337	60,696	48,790	20,372	R. Ritchie	Toronto	PC
York — Scarborough	148,286	98,132	81,610	36,718	P. McCrossan	Toronto	PC
York South — Weston	88,479	46,395	37,367	14,913	Ursula Appolloni	Toronto	Lib.
York West	96,894	48,495	39,550	18,410	J. Fleming	Weston	Lib.
MANITOBA (14 members)							
Brandon — Souris	71,816	48,808	36,352	19,108	W.G. Dinsdale	Brandon	PC
Churchill	66,961	35,646	24,358	12,544	R. Murphy	Thompson	NDP
Dauphin	56,223	36,964	28,416	12,239	G. Ritchie	Dauphin	PC
Lisgar	65,673	42,402	30,540	21,366	J. Murta	Graysville	PC
Portage — Marquette	63,014	42,224	32,378	18,824	C. Mayer	Carberry	PC
Provencher	67,950	44,848	33,084	17,030	J. Epp	Steinbach	PC
St. Boniface	85,936	58,586	48,425	19,752	R. Bockstael	Winnipeg	Lib.
Selkirk — Interlake	63,056	42,928	33,410	14,225	T. Sargeant	Gimli	NDP
Winnipeg — Assiniboine	92,959	61,499	50,118	28,192	D. McKenzie	Winnipeg	PC
Winnipeg — Birds Hill	92,403	62,361	50,927	25,492	W. Blaikie	Winnipeg	NDP
Winnipeg — Fort Garry	80,308	57,066	45,905	18,822	L. Axworthy	Winnipeg	Lib.
Winnipeg North	81,554	55,513	42,827	22,417	D. Orlikow	Winnipeg	NDP
Winnipeg North Centre	66,403	39,958	26,449	15,121	S. Knowles	Winnipeg	NDP
Winnipeg — St. James	67,250	41,295	32,294	12,640	R. Lane	Winnipeg	PC

3.4 Electoral districts, voters on the list, votes polled and names and addresses of members of the House of Commons as elected at the thirty-first general election, May 22, 1979 (continued)

Province and electoral district	Population, Census 1976	Voters on list	Total votes polled (incl. rejections)	Votes polled by member	Name of member	Postal address	Party affiliation ¹
SASKATCHEWAN (14 members)							
Assiniboia	59,880	40,100	33,874	12,365	L. Gustafson	Macoun	PC
Humboldt — Lake Centre	63,193	41,195	33,471	13,066	G. Richardson	Semans	PC
Kindersley — Lloydminster	64,018	41,593	33,762	16,614	W. McKnight	Wartime	PC
Mackenzie	54,836	35,473	27,317	13,050	S.J. Korchinski	Rama	PC
Moose Jaw	60,636	41,066	33,140	16,031	D. Neil	Moose Jaw	PC
Prince Albert	69,795	44,954	33,674	16,438	J.G. Diefenbaker	Prince Albert	PC
Qu'Appelle — Moose Mountain	56,295	36,704	29,821	16,023	A. Hamilton	Manotick, Ont.	PC
Regina East	77,374	51,935	41,184	15,022	S. de Jong	Regina	NDP
Regina West	82,631	57,971	45,724	19,340	L. Benjamin	Regina	NDP
Saskatoon East	72,847	50,567	41,433	15,234	R. Ogle	Saskatoon	NDP
Saskatoon West	78,834	59,067	43,848	20,174	R. Hnatyshyn	Saskatoon	PC
Swift Current — Maple Creek	54,461	35,969	29,169	15,213	F. Hamilton	Swift Current	PC
The Battlefords — Meadow Lake	60,520	38,195	29,075	11,003	T.A. Nylander	North Battleford	PC
Yorkton — Melville	66,003	44,355	35,240	16,677	L. Nystrom	Yorkton	NDP
ALBERTA (21 members)							
Athabasca	71,679	46,204	27,331	15,978	P. Yewchuk	Lac-la-Biche	PC
Bow River	80,161	56,159	41,264	25,973	G. Taylor	Drumheller	PC
Calgary Centre	79,800	56,426	37,565	22,124	H. Andre	Calgary	PC
Calgary East	105,986	73,036	46,669	28,320	J. Kushner	Calgary	PC
Calgary North	86,186	59,593	43,675	27,994	E.M. Woolliams	Calgary	PC
Calgary South	109,255	76,158	57,074	37,900	J. Thomson	Calgary	PC
Calgary West	88,683	59,708	43,732	28,474	J. Hawkes	Calgary	PC
Crowfoot	62,505	42,032	32,731	25,202	A. Malone	Camrose	PC
Edmonton East	89,872	56,254	33,492	18,699	W. Yurko	Edmonton	PC
Edmonton North	100,370	66,187	40,762	24,618	S.E. Paproski	Edmonton	PC
Edmonton South	94,403	63,877	46,425	27,713	D. Roche	Edmonton	PC
Edmonton — Strathcona	90,361	65,732	44,544	26,430	D. Kilgour	Edmonton	PC
Edmonton West	86,346	59,558	38,594	21,423	M. Lambert	Ottawa, Ont.	PC
Lethbridge — Foothills	91,649	61,369	41,780	29,069	B.A. Thacker	Lethbridge	PC
Medicine Hat	84,853	57,142	40,066	28,893	B. Hargrave	Walsby	PC
Peace River	80,936	52,792	32,962	20,748	G.W. Baldwin	Peace River	PC
Pembina	107,072	70,226	50,689	33,722	P. Elzinga	Sherwood Park	PC
Red Deer	90,165	64,053	44,490	33,226	G. Towers	Red Deer	PC
Vegreville	73,544	50,220	33,828	26,448	D. Mazankowski	Vegreville	PC
Wetaskiwin	75,300	52,500	36,508	27,785	S. Schellenberger	Spruce Grove	PC
Yellowhead	88,911	60,462	41,356	28,849	J. Clark ²	Ottawa	PC
BRITISH COLUMBIA (28 members)							
Burnaby	96,607	67,474	51,951	20,604	S.J. Robinson	Burnaby	NDP
Capilano	83,192	56,199	45,667	27,099	R. Huntington	West Vancouver	PC
Cariboo — Chilcotin	75,243	43,563	29,952	12,767	L. Greenaway	Williams Lake	PC
Comox — Powell River	105,994	70,129	49,934	22,075	R. Skelly	Courtenay	NDP
Cowichan — Malahat — The Islands	87,696	58,218	43,780	19,025	D.L. Taylor	Duncan	PC
Esquimalt — Saanich	100,252	70,614	54,771	29,791	D.W. Munro	Victoria	PC
Fraser Valley East	90,318	59,472	42,781	24,363	A. Patterson	Abbotsford	PC
Fraser Valley West	109,230	68,092	49,725	26,892	R. Wenman	Surrey	PC
Kamloops — Shuswap	95,100	59,762	44,338	19,369	D. Cameron	Kamloops	PC
Kootenay East — Revelstoke	71,796	44,389	31,724	12,904	S. Graham	Invermere	PC
Kootenay West	61,177	38,601	28,968	13,645	R. Brisco	Trail	PC
Mission — Port Moody	97,939	62,223	47,660	20,847	M. Rose	Mission	NDP
Nanaimo — Alberni	95,904	63,581	48,545	21,304	T. Miller	Nanaimo	NDP
New Westminster — Coquitlam	85,081	56,842	43,523	19,301	Pauline Jewett	Burnaby	NDP
North Vancouver — Burnaby	86,576	54,275	43,412	16,545	C. Cook	North Vancouver	PC
Okanagan	105,092	70,638	51,688	26,560	G.H. Whittaker	Kelowna	PC
Okanagan-Similkameen	83,424	56,731	42,505	21,008	F. King	Kaleden	PC
Prince George — Bulkley Valley	81,686	46,879	31,277	13,300	L. McCuish	Prince George	PC
Prince George — Peace River	69,146	40,146	26,787	16,288	F. Oberle	Chetwynd	PC
Richmond — South Delta	109,365	71,749	56,111	30,262	T. Siddon	Richmond	PC
Skeena	68,918	35,211	26,352	10,996	J. Fulton	Queen Charlotte Islands	NDP
Surrey — White Rock — North Delta	104,312	73,266	57,253	30,009	B. Friesen	White Rocks	PC

3.4 Electoral districts, voters on the list, votes polled and names and addresses of members of the House of Commons as elected at the thirty-first general election, May 22, 1979 (concluded)

Province and electoral district	Population, Census 1976	Voters on list	Total votes polled (incl. rejections)	Votes polled by member	Name of member	Postal address	Party affiliation ¹
BRITISH COLUMBIA (concluded)							
Vancouver Centre	81,582	63,834	44,764	15,430	A. Phillips	Vancouver	Lib.
Vancouver East	78,293	45,526	32,258	13,697	Margaret Mitchell	Vancouver	NDP
Vancouver Kingsway	85,613	48,635	35,648	15,928	I. Waddell	Vancouver	NDP
Vancouver Quadra	83,855	56,336	43,835	19,869	W. Clarke	Vancouver	PC
Vancouver South	85,066	55,299	42,266	22,653	J.A. Fraser	Vancouver	PC
Victoria	88,151	66,913	51,447	28,058	A.B. McKinnon	Victoria	PC
YUKON (1 member)							
Yukon	21,836	13,785	10,240	4,538	E. Nielsen	Whitehorse	PC
NORTHWEST TERRITORIES (2 members)							
Nunatsiag	14,913	8,060	5,235	1,963	P. Ittinuar	Rankin Inlet	NDP
Western Arctic	27,696	16,123	11,624	4,058	D. Nickerson	Yellowknife	PC

¹Party standings as a result of the general election, May 22, 1979: Progressive Conservative 136, Liberal 114, New Democratic 26 and Social Credit 6.

²Leader of a political party.

³Speaker of the House of Commons.

3.5 Electoral districts, votes polled and names of members of the House of Commons as elected at the thirty-second general election, Feb. 18, 1980

Province and electoral district	Population, Census 1976	Total votes polled (incl. rejections)	Votes polled by member	Name of member	Party affiliation ¹
NEWFOUNDLAND (7 members)					
Bonavista — Trinity — Conception	73,990	27,951	14,467	D. Rooney	Lib.
Burin — St. George's	63,332	21,561	14,979	R. Simmons	Lib.
Gander — Twillingate	76,698	27,720	17,465	G. Baker	Lib.
Grand Falls — White Bay — Labrador	81,331	29,684	15,530	W. Rompkey	Lib.
Humber — Port au Port — St. Barbe	81,282	29,677	13,170	B. Tobin	Lib.
St. John's East	91,861	32,795	20,007	J.A. McGrath	PC
St. John's West	89,231	34,695	19,067	J.C. Crosbie	PC
PRINCE EDWARD ISLAND (4 members)					
Cardigan	29,249	18,027	8,690	D.J. MacDonald	Lib.
Egmont	30,380	16,582	8,639	G. Henderson	Lib.
Hillsborough	27,800	14,914	7,051	T. McMillan	PC
Malpeque	30,800	17,004	8,486	M. Gass	PC
NOVA SCOTIA (11 members)					
Annapolis Valley — Hants	80,360	41,082	17,152	J.P. Nowlan	PC
Cape Breton — East	64,503	31,931	12,478	D. Dingwall	Lib.
Cape Breton Highlands — Canso	64,937	36,423	18,262	A.J. MacEachen	Lib.
Cape Breton — The Sydneys	67,137	34,766	15,164	R. MacLellan	Lib.
Central Nova	63,479	32,519	15,595	E.M. MacKay	PC
Cumberland — Colchester	77,685	39,965	18,463	R.C. Coates	PC

3.5 Electoral districts, votes polled and names of members of the House of Commons as elected at the thirty-second general election, Feb. 18, 1980 (continued)

Province and electoral district	Population, Census 1976	Total votes polled (incl. rejections)	Votes polled by member	Name of member	Party affiliation ¹
NOVA SCOTIA (concluded)					
Dartmouth — Halifax					
East	94,275	43,073	17,968	M. Forrestall	PC
Halifax	76,572	40,934	16,949	G. Regan	Lib.
Halifax West	97,968	48,168	19,195	H. Crosby	PC
South Shore	72,305	36,564	16,149	L. R. Crouse	PC
South West Nova	69,350	38,665	19,151	Coline Campbell	Lib.
NEW BRUNSWICK (10 members)					
Carleton — Charlotte	64,226	30,845	14,565	F. McCa'n	PC
Fundy — Royal	76,864	41,302	16,805	R. Corbett	PC
Gloucester	68,105	35,101	22,229	H. Breau	Lib.
Madawaska — Victoria	55,824	26,369	17,190	E. G. Corbin	Lib.
Moncton	88,512	46,806	22,365	G. McCauley	Lib.
Northumberland —					
Miramichi	56,095	27,168	14,799	M. A. Dionne	Lib.
Restigouche	53,540	27,246	16,560	M. Harquail	Lib.
Saint John	74,063	31,833	13,122	M. Landers	Lib.
Westmorland — Kent	58,176	32,421	21,625	R. LeBlanc	Lib.
York — Sunbury	81,845	38,415	18,243	J.R. Howie	PC
QUEBEC (75 members)					
Abitibi	94,431	43,801	22,050	R. Gingras	Lib.
Argenteuil	63,655	32,349	21,972	R. Gourd	Lib.
Beauce	74,739	42,808	21,647	N. Lapointe	Lib.
Beauharnois —					
Salaberry	75,371	38,385	27,476	G. Laniel	Lib.
Bellechasse	80,052	40,632	20,636	A. Garant	Lib.
Berthier — Maskinongé	66,367	40,601	21,232	A. Yanakis	Lib.
Blainville — Deux-					
Montagnes	92,001	49,265	35,979	F. Fox	Lib.
Bonaventure — Îles-de-					
la-Madeleine	59,505	27,942	19,193	R. Bujold	Lib.
Chambly	97,513	47,634	32,849	R. Dupont	Lib.
Champlain	74,956	40,319	25,758	M. Veillette	Lib.
Charlesbourg	118,069	60,475	42,569	P. Bussières	Lib.
Charlevoix	73,215	31,562	22,129	C. Lapointe	Lib.
Châteauguay	79,645	37,319	27,151	I. Watson	Lib.
Chicoutimi	81,744	31,364	20,821	M. Dionne	Lib.
Drummond	71,051	36,302	26,082	Y. Pinard	Lib.
Frontenac	68,830	32,372	14,745	L. Corriveau	Lib.
Gaspé	59,958	29,732	17,846	A. Cyr	Lib.
Gatineau	98,058	45,313	35,437	R. Cousineau	Lib.
Hull	86,753	41,498	27,938	G. Isabelle	Lib.
Joliette	83,086	48,294	22,280	R. LaSalle	PC
Jonquière	66,697	30,388	22,202	G. Marceau	Lib.
Kamouraska — Rivière-					
du-Loup	68,939	35,154	19,117	R. Gendron	Lib.
Labelle	83,413	44,878	29,488	M. Dupras	Lib.
Lac-Saint-Jean	56,083	34,106	21,267	P. Gimaiel	Lib.
Langelier	71,365	34,873	24,714	G. Lamontagne	Lib.
Laprairie	102,659	51,702	36,842	P. Deniger	Lib.
Lévis	95,021	53,748	35,519	R. Guay	Lib.
Longueuil	122,429	48,399	32,755	J. Olivier	Lib.
Lotbinière	76,021	42,204	24,780	J.-G. Dubois	Lib.
Louis-Hébert	102,227	53,375	34,231	D. Dawson	Lib.
Manicouagan	82,161	31,814	21,499	A. Maltais	Lib.
Matapédia — Matane	57,739	27,362	21,116	P. De Bané	Lib.
Mégantic — Compton —					
Stanstead	73,244	37,938	21,562	C. Tessier	Lib.
Missisquoi	70,409	37,947	20,022	A. Bachand	Lib.
Montmorency	78,219	41,001	28,403	L. Duclos	Lib.
Pontiac — Gatineau —					
Labelle	67,103	30,904	21,605	T. Lefebvre	Lib.
Portneuf	73,957	39,967	29,234	R. Dion	Lib.
Québec-Est	84,509	38,264	27,546	G. Duquet	Lib.
Richelieu	77,855	41,614	27,886	J.-L. Leduc	Lib.
Richmond	63,498	33,387	21,104	A. Tardif	Lib.
Rimouski	74,378	38,637	21,482	Eva Côté	Lib.
Roberval	64,832	34,421	17,724	Suzanne Beauchamp-Niquet	Lib.
Saint-Hyacinthe	78,636	42,707	28,130	M. Ostiguy	Lib.
Saint-Jean	81,665	42,254	29,961	P.-A. Massé	Lib.
Saint-Maurice	68,532	36,090	27,356	J. Chrétien	Lib.
Shefford	86,788	48,055	32,449	J. Lapierre	Lib.
Sherbrooke	80,486	38,370	27,224	Irénée Pelletier	Lib.

3.5 Electoral districts, votes polled and names of members of the House of Commons as elected at the thirty-second general election, Feb. 18, 1980 (continued)

Province and electoral district	Population, Census 1976	Total votes polled (incl. rejections)	Votes polled by member	Name of member	Party affiliation ¹
QUEBEC (concluded)					
Témiscamingue	80,015	36,431	22,031	H. Tousignant	Lib.
Terrebonne	103,213	53,498	36,089	J.R. Comtois	Lib.
Trois-Rivières	71,477	55,502	23,787	C.G. Lajoie	Lib.
Verchères	98,491	55,615	37,393	B. Loisel	Lib.
Island of Montreal and Île-Jésus					
Bourassa	101,535	40,545	30,924	C. Rossi	Lib.
Dollard	105,595	50,131	37,968	L. Desmarais	Lib.
Duvernay	98,164	48,443	34,560	Y. Demers	Lib.
Gamelin	86,806	40,988	29,232	A. Portelance	Lib.
Hochelaga — Maisonneuve	79,433	29,410	21,138	S. Joyal	Lib.
Lachine	86,500	42,895	25,502	R. Blaker	Lib.
LaSalle	94,818	42,348	32,561	J. Campbell	Lib.
Laurier	76,488	24,751	16,201	D. Berger	Lib.
Laval	102,626	51,803	38,580	M. Roy	Lib.
Laval-des-Rapides	92,983	44,975	33,317	Jeanne Sauvé ²	Lib.
Mercier	93,177	39,574	27,428	Céline Hervieux-Payette	Lib.
Mount Royal	90,372	41,870	33,821	P.-E. Trudeau ³	Lib.
Notre-Dame-de-Grâce	89,507	39,168	27,604	W. Allmand	Lib.
Outremont	87,132	32,608	23,004	M. Lalonde	Lib.
Papineau	80,763	30,483	22,399	A. Ouellet	Lib.
Rosemont	82,543	35,393	26,544	C.-A. Lachance	Lib.
Saint-Denis	88,648	37,079	28,383	M. Prud'homme	Lib.
Saint-Henri-Westmount	85,202	37,163	24,913	D. Johnston	Lib.
Saint-Jacques	72,772	25,350	17,761	J. Guibault	Lib.
Saint-Léonard — Anjou	121,897	52,646	42,205	Monique Bégin	Lib.
Sainte-Marie	77,435	28,436	19,159	J.-C. Malépart	Lib.
Saint-Michel	86,078	36,561	27,210	Thérèse Killens	Lib.
Vaudreuil	108,866	54,696	39,159	H. Herbert	Lib.
Verdun	84,055	37,160	27,575	R. Savard	Lib.
ONTARIO (95 members)					
Algoma	71,145	34,618	17,432	M. Foster	Lib.
Brampton — Georgetown	125,589	62,589	25,243	J. McDermid	PC
Brant	99,099	46,845	19,194	D. Blackburn	NDP
Bruce — Grey	73,771	38,870	18,326	G.M. Gurbini	PC
Burlington	104,314	53,768	27,212	W. Kemppling	PC
Cambridge	77,427	36,482	14,314	C. Speyer	PC
Cochrane	62,195	29,187	15,280	K. Penner	Lib.
Durham — Northumberland	76,576	39,212	17,587	A. Lawrence	PC
Elgin	69,092	33,953	16,845	J. Wise	PC
Erie	70,161	32,324	12,861	G. Fretz	PC
Essex — Kent	71,366	32,057	16,898	R. Daudlin	Lib.
Essex — Windsor	102,295	48,296	24,651	E. Whelan	Lib.
Glengarry — Prescott — Russell	74,796	41,367	28,189	D. Ethier	Lib.
Grey — Simcoe	71,254	35,894	16,488	G. Mitges	PC
Guelph	80,834	44,172	17,268	J. Schroder	Lib.
Haldimand — Norfolk	89,252	44,466	18,600	B. Bradley	PC
Halton	102,053	53,089	24,752	O. Jelinek	PC
Hamilton East	84,205	37,141	15,430	J. Munro	Lib.
Hamilton Mountain	96,482	50,077	17,700	I. Deans	NDP
Hamilton Westworth	80,608	41,987	18,863	G. Scott	PC
Hamilton West	87,522	40,448	15,500	L. Alexander	PC
Hastings — Frontenac	67,804	33,693	14,211	W. Vankoughnet	PC
Huron — Bruce	67,496	34,863	16,520	M. Cardiff	PC
Kenora — Rainy River	75,392	34,872	14,687	J.M. Reid	Lib.
Kent	75,921	35,350	15,140	M. Bossy	Lib.
Kingston and the Islands	89,243	43,542	18,146	Flora MacDonald	PC
Kitchener	106,133	49,876	19,502	P. Lang	Lib.
Lambton — Middlesex	75,269	38,103	17,081	R. Ferguson	Lib.
Lanark — Renfrew — Carleton	72,786	37,631	20,487	P. Dick	PC
Leeds — Grenville	78,604	38,892	19,800	T. Cossitt	PC
Lincoln	90,700	47,999	17,449	B. Mackasey	Lib.
London East	85,391	37,331	17,861	C. Turner	Lib.
London — Middlesex	74,714	36,591	15,682	G. Bloomfield	Lib.
London West	106,282	61,572	27,118	J. Buchanan	Lib.
Mississauga North	138,576	68,070	30,000	D. Fisher	Lib.
Mississauga South	111,441	52,117	21,480	D. Blenkarn	PC
Nepean — Carleton	108,336	58,967	31,498	W. Baker	PC
Niagara Falls	81,908	38,810	15,871	A. MacBain	Lib.
Nickel Belt	90,799	41,792	19,805	Judy Erola	Lib.
Nipissing	69,159	32,673	16,394	J.-J. Blais	Lib.
Northumberland	75,974	37,020	17,860	G. Hees	PC

3.5 Electoral districts, votes polled and names of members of the House of Commons as elected at the thirty-second general election, Feb. 18, 1980 (continued)

Province and electoral district	Population, Census 1976	Total votes polled (incl. rejections)	Votes polled by member	Name of member	Party affiliation ¹
ONTARIO (concluded)					
Ontario	87,803	48,991	19,963	S. Fennell	PC
Oshawa	107,023	52,110	26,761	E. Broadbent ^a	NDP
Ottawa-Carleton	119,748	65,519	34,960	J.-L. Pepin	Lib.
Ottawa Centre	83,371	47,417	21,659	J. Evans	Lib.
Ottawa-Vanier	84,309	41,684	27,564	J.-R. Gauthier	Lib.
Ottawa West	95,479	51,025	22,460	L. Francis	Lib.
Oxford	83,337	42,374	19,382	B. Halliday	PC
Perry Sound — Muskoka	69,668	34,170	14,333	S. Darling	PC
Perth	66,279	32,023	15,171	W. Jarvis	PC
Peterborough	91,656	48,359	19,417	W. Domm	PC
Prince Edward — Hastings	75,447	36,992	16,893	J. Ellis	PC
Renfrew — Nipissing — Pembroke	82,755	39,813	20,529	L. Hopkins	Lib.
St. Catharines	102,420	49,386	18,622	J. Reid	PC
Sarnia	81,342	40,291	16,275	J. Cullen	Lib.
Sault Ste Marie	63,615	32,332	15,449	R. Irwin	Lib.
Simcoe North	80,718	40,932	14,874	D.G. Lewis	PC
Simcoe South	92,549	45,540	19,768	R.A. Stewart	PC
Stormont — Dundas	85,366	42,311	22,064	E. Lumley	Lib.
Sudbury	86,950	39,398	21,844	D. Frith	Lib.
Thunder Bay — Atikokan	68,571	33,840	13,234	P. McRae	Lib.
Thunder Bay — Nipigon	68,660	35,727	16,592	J. Masters	Lib.
Timiskaming	58,342	26,903	11,135	B. Lonsdale	Lib.
Timmins-Chapleau	64,004	30,184	15,628	R. Chénier	Lib.
Victoria — Haliburton	82,355	42,096	20,308	W. Scott	PC
Waterloo	105,569	51,704	20,609	W. McLean	PC
Welland	80,922	41,536	18,112	G. Parent	Lib.
Wellington — Dufferin — Simcoe	81,988	39,546	21,205	P. Beatty	PC
Windsor — Walkerville	82,331	40,354	20,869	M. MacGuigan	Lib.
Windsor West	82,902	34,031	19,755	H. Gray	Lib.
York North	108,704	60,119	26,039	J. Gamble	PC
York Peel	99,027	51,036	23,955	S. Stevens	PC
Metropolitan Toronto					
Beaches	80,008	35,723	12,675	N. Young	NDP
Broadview — Greenwood	79,660	32,359	12,953	R. Rae	NDP
Davenport	77,236	32,540	14,545	C. Caccia	Lib.
Don Valley East	109,824	49,363	21,944	D. Smith	Lib.
Don Valley West	88,884	48,954	25,260	J. Bosley	PC
Eglinton — Lawrence	89,957	41,606	20,861	R. de Corneille	Lib.
Etobicoke Centre	103,467	57,465	26,969	M. Wilson	PC
Etobicoke — Lakeshore	88,276	44,090	17,903	K. Robinson	Lib.
Etobicoke North	105,366	50,348	23,243	R. MacLaren	Lib.
Parkdale — High Park	83,321	38,048	17,213	J. Flis	Lib.
Rosedale	81,020	38,613	16,862	D. Crombie	PC
St. Paul's	81,109	39,758	17,905	J. Roberts	Lib.
Scarborough Centre	89,037	41,347	16,595	N. Kelly	PC
Scarborough East	93,641	43,738	17,658	G. Gilchrist	Lib.
Scarborough West	87,298	40,974	14,316	D. Weatherhead	Lib.
Spadina	78,052	28,648	13,280	P. Stollery	Lib.
Trinity	82,294	22,141	12,628	Aideen Nicholson	Lib.
Willowdale	88,248	47,130	22,218	J. Peterson	Lib.
York Centre	102,597	38,229	23,116	R. Kaplan	Lib.
York East	101,337	46,094	20,580	D. Collette	Lib.
York — Scarborough	148,286	82,134	39,208	P.J. Crossgrove	Lib.
York South — Weston	88,479	35,275	16,520	Ursula Appolloni	Lib.
York West	96,894	37,945	21,385	J. Fleming	Lib.
MANITOBA (14 members)					
Brandon — Souris	71,816	34,397	16,098	W. Dinsdale	PC
Churchill	66,961	23,933	10,319	R. Murphy	NDP
Dauphin	56,223	29,035	12,960	Laverne Lewycky	NDP
Lisgar	65,673	28,907	18,057	J.B. Murta	PC
Portage — Marquette	63,014	30,686	16,219	C. Mayer	PC
Provencher	67,950	32,758	14,677	J. Epp	PC
St. Boniface	85,936	44,458	20,076	R. Bockstael	Lib.
Selkirk-Interlake	63,056	33,017	15,055	T. Sargeant	NDP
Winnipeg — Assiniboine	92,959	45,194	22,160	D. McKenzie	PC
Winnipeg — Birds Hill	92,403	45,543	24,672	W. Blaikie	NDP
Winnipeg — Fort Garry	80,308	40,475	18,694	L. Axworthy	Lib.
Winnipeg North	81,554	36,866	18,561	D. Orlikow	NDP
Winnipeg North Centre	66,403	22,426	12,635	S. Knowles	NDP
Winnipeg — St. James	67,250	29,678	11,078	C. Keeper	NDP

3.5 Electoral districts, votes polled and names of members of the House of Commons as elected at the thirty-second general election, Feb. 18, 1980 (continued)

Province and electoral district	Population, Census 1976	Total votes polled (incl. rejections)	Votes polled by member	Name of member	Party affiliation ¹
SASKATCHEWAN (14 members)					
Assiniboia	59,880	31,395	11,251	L. Gustafson	PC
Humboldt — Lake Centre	63,193	31,894	13,243	V. Althouse	NDP
Kindersley — Lloydminster	64,018	30,734	14,182	W. McKnight	PC
Mackenzie	54,836	26,037	10,794	S. Korchinski	PC
Moose Jaw	60,636	30,955	14,330	D. Neil	PC
Prince Albert	69,795	33,424	11,601	S. Hovdebo	NDP
Qu'Appelle — Moose Mountain	56,295	27,733	13,676	A. Hamilton	PC
Regina East	77,374	37,130	13,630	S. de Jong	NDP
Regina West	82,631	41,277	17,353	L. Benjamin	NDP
Saskatoon East	72,847	37,723	12,985	R. Ogle	NDP
Saskatoon West	78,834	40,822	17,636	R. Hnatyshyn	PC
Swift Current — Maple Creek	54,461	27,023	12,917	F. Hamilton	PC
The Battlefords — Meadow Lake	60,520	27,547	9,819	D. Anguish	NDP
Yorkton — Melville	66,003	33,474	15,240	L. Nystrom	NDP
ALBERTA (21 members)					
Athabasca	71,679	28,102	13,287	J. Shields	PC
Bow River	80,161	39,668	30,250	G. Taylor	PC
Calgary Centre	79,800	32,536	18,610	H. Andre	PC
Calgary East	105,986	43,766	23,073	J. Kushner	PC
Calgary North	86,186	41,391	26,201	W. Wright	PC
Calgary South	109,255	51,260	34,873	J. Thomson	PC
Calgary West	88,683	40,527	26,639	J. Hawkes	PC
Crowfoot	62,505	30,733	23,491	A. J. Malone	PC
Edmonton East	89,872	27,669	14,840	W. Yurko	PC
Edmonton North	100,370	36,452	21,442	S. Paproski	PC
Edmonton South	94,403	40,729	24,839	D. Roche	PC
Edmonton — Strathcona	90,361	40,373	23,920	D. Kilgour	PC
Edmonton West	86,346	33,374	18,730	M. Lambert	PC
Lethbridge — Foothills	91,649	39,682	27,114	B. Thacker	PC
Medicine Hat	84,853	36,931	25,907	B. Hargrave	PC
Peace River	80,936	32,015	18,953	A. Cooper	PC
Pembina	107,072	48,740	31,457	P. Elzinga	PC
Red Deer	90,165	42,590	31,758	G. Towers	PC
Vegreville	73,544	34,441	25,682	D. Mazankowski	PC
Wetaskiwin	75,300	35,606	26,620	S. Schellenberger	PC
Yellowhead	88,911	40,309	27,953	J. Clark ²	PC
BRITISH COLUMBIA (28 members)					
Burnaby	96,607	51,013	21,587	S. Robinson	NDP
Capilano	83,192	44,437	26,327	R. Huntington	PC
Cariboo — Chilcotin	75,243	30,404	12,355	L. Greenaway	PC
Comox — Powell River	105,994	51,175	25,007	R. Skelly	NDP
Cowichan — Malahat — The Islands	87,696	46,071	22,154	J. Manly	NDP
Esquimalt — Saanich	100,252	55,548	24,961	D. Munro	NDP
Fraser Valley East	90,318	44,342	21,989	A. Patterson	PC
Fraser Valley West	109,230	50,953	25,714	R. L. Wenman	PC
Kamloops — Shuswap	95,100	45,600	17,876	N. A. Riis	NDP
Kootenay East — Revelstoke	71,796	33,446	13,299	S. Parker	NDP
Kootenay West	61,177	28,518	12,232	L. S. Kristiansen	NDP
Mission — Port Moody	97,939	49,323	23,224	M. Rose	NDP
Nanaimo — Alberni	95,904	49,060	24,082	T. Miller	NDP
New Westminster — Coquitlam	85,081	42,106	19,498	Pauline Jewett	NDP
North Vancouver — Burnaby	86,576	44,105	16,774	C. Cook	PC
Okanagan North	105,092	51,413	24,983	V. Dantzer	PC
Okanagan-Similkameen	83,424	42,676	19,161	F. King	PC
Prince George — Bulkley Valley	81,686	32,115	12,639	L. McCuish	PC
Prince George — Peace River	69,146	26,160	13,593	F. Oberle	PC
Richmond — South Delta	109,365	56,267	29,192	T. Siddon	PC

3.5 Electoral districts, votes polled and names of members of the House of Commons as elected at the thirty-second general election, Feb. 18, 1980 (concluded)

Province and electoral district	Population, Census 1976	Total votes polled (incl. rejections)	Votes polled by member	Name of member	Party affiliation ¹
BRITISH COLUMBIA (concluded)					
Skeena	68,918	26,832	13,265	J. Fulton	NDP
Surrey — White Rock — North Delta	104,312	57,651	28,151	B. Friesen	PC
Vancouver Centre	81,582	46,872	16,462	Pat Carney	PC
Vancouver East	78,293	32,718	14,245	Margaret Mitchell	NDP
Vancouver Kingsway	85,613	36,289	16,928	I. Waddell	NDP
Vancouver Quadra	83,855	45,672	20,997	W. Clarke	PC
Vancouver South	85,066	41,950	22,288	J.A. Fraser	PC
Victoria	88,151	49,952	25,068	A. McKinnon	PC
YUKON (1 member)					
Yukon	21,836	9,698	3,926	E. Nielsen	PC
NORTHWEST TERRITORIES (2 members)					
Nunatsiag	14,913	5,713	2,688	P. Ittinuar	NDP
Western Arctic	27,696	10,606	3,558	D. Nickerson	PC

¹Party standings as a result of the general election, Feb. 18, 1980: Liberal 147, Progressive Conservative 103 and New Democratic 32.

²Leader of a political party.

³Speaker of the House of Commons.

3.6 Voters on the lists and votes polled at the federal general elections of 1972, 1974, 1979 and 1980

Province or territory	Voters and votes polled			
	Voters on the lists			
	1972	1974	1979	1980
Newfoundland	289,294	304,370	338,730	344,273
Prince Edward Island	68,992	73,069	80,332	82,708
Nova Scotia	492,001	524,767	567,648	578,722
New Brunswick	387,136	406,518	456,707	465,898
Quebec	3,693,918	3,849,009	4,281,669	4,375,418
Ontario	4,601,282	4,803,822	5,328,123	5,574,433
Manitoba	610,568	633,411	670,098	686,643
Saskatchewan	558,876	569,316	619,144	638,393
Alberta	955,531	1,016,046	1,249,688	1,309,927
British Columbia	1,312,832	1,407,066	1,604,890	1,703,724
Yukon ¹	10,857	12,312	13,785	14,010
Northwest Territories ²	19,491	21,299	24,183	25,125
Total	13,000,778	13,621,005	15,234,997	15,799,274
	Votes polled			
	1972	1974	1979	1980
Newfoundland	182,482	175,534	203,271	204,083
Prince Edward Island	59,078	58,649	65,131	66,527
Nova Scotia	391,590	388,830	427,746	424,090
New Brunswick	298,164	289,492	339,560	337,506
Quebec	2,790,172	2,592,679	3,253,017	2,993,044
Ontario	3,650,542	3,582,489	4,164,502	4,017,871
Manitoba	453,642	448,431	515,483	447,373
Saskatchewan	442,246	415,268	490,732	457,168
Alberta	722,338	684,649	855,537	796,894
British Columbia	961,441	1,014,219	1,198,922	1,212,668
Yukon ¹	8,638	8,354	10,240	9,698
Northwest Territories ²	14,328	13,008	16,859	16,319
Total	9,974,661	9,671,602	11,541,000	11,013,241

¹Electoral district of Yukon.

²Electoral district of Northwest Territories.

3.7 Number of municipalities classified by type and size group, by province, as at Jan. 1, 1977 and 1978

Year, type and size group	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT	NWT	Canada
1977													
TYPE													
Regional municipalities	—	—	—	—	75	39	—	—	—	28	—	—	142
Metropolitan and regional municipalities ¹	—	—	—	—	3	12	—	—	—	—	—	—	15
Counties and regional districts	—	—	—	—	72	27	—	—	—	28	—	—	127
Unitary municipalities	129	36	65	112	1,496	784	185	783	327	140	3	7	4,067
Cities ²	2	1	3	6	66	45	5	11	10	33	2	1	185
Towns	127 ^a	8	38	21	193	144	35	135	102	10	1	4	818
Villages	—	27	—	85	241	120	40	344	167	59	—	2	1,085
Rural municipalities ⁴	—	—	24	—	996	475	105	293	48	38	—	—	1,979
Quasi-municipalities ⁵	171	—	—	—	—	13	17	7	22	269	4	10	513
Total	300	36	65	112	1,571	836	202	790	349	437	7	17	4,722
POPULATION SIZE GROUP													
(1976 Census)													
Unitary municipalities	—	—	—	—	—	—	—	—	—	—	—	—	—
Over 100,000	—	—	1	—	4	17	1	2	2	3	—	—	30
50,000-99,999	1	—	2	2	17	14	—	—	—	9	—	—	45
10,000-49,999	5	1	17	5	71	76	3	6	14	26	1	—	226
Under 10,000	123	35	45	105	1,404	677	181	775	311	102	2	7	3,766
Total	129	36	65	112	1,496	784	185	783	327	140	3	7	4,067
1978													
TYPE													
Regional municipalities	—	—	—	—	75	39	—	—	—	28	—	—	142
Metropolitan and regional municipalities ¹	—	—	—	—	3	12	—	—	—	—	—	—	15
Counties and regional districts	—	—	—	—	72	27	—	—	—	28	—	—	127
Unitary municipalities	133	37	65	112	1,502	785	185	791	330	140	3	7	4,090
Cities ²	2	1	3	6	66	45	5	11	10	33	2	1	185
Towns	131	8	38	21	192	144	35	135	104	11	1	4	824
Villages	—	28	—	85	240	120	40	346	168	58	—	2	1,087
Rural municipalities ⁴	—	—	24	—	1,004	476	105	299	48	38	—	—	1,994
Quasi-municipalities ⁵	174	—	—	—	—	13	17	—	21	269	4	10	508
Total	307	37	65	112	1,577	837	202	791	351	437	7	17	4,740
POPULATION SIZE GROUP													
(1976 Census)													
Unitary municipalities	—	—	—	—	—	—	—	—	—	—	—	—	—
Over 100,000	—	—	1	—	4	17	1	2	2	3	—	—	30
50,000-99,999	1	—	2	2	17	14	—	—	—	9	—	—	45
10,000-49,999	5	1	17	5	71	76	3	6	14	26	1	—	225
Under 10,000	127	36	45	105	1,410	678	181	783	314	102	2	7	3,790
Total	133	37	65	112	1,502	785	185	791	330	140	3	7	4,090

¹Includes urban communities in Quebec; and Metropolitan Toronto, regional municipalities and the district municipality in Ontario.

²Includes the five boroughs of Metropolitan Toronto.

³Includes 11 rural districts.

⁴Includes municipalities in Nova Scotia; parishes, townships, united townships and municipalities in Quebec; townships in Ontario; rural municipalities in Manitoba and Saskatchewan; municipal districts and counties in Alberta; and districts in British Columbia.

⁵Includes local government communities, local improvement districts and the metropolitan area in Newfoundland; improvement districts in Ontario and Alberta; local government districts in Manitoba; local improvement districts in Saskatchewan, British Columbia and Yukon; and hamlets in Northwest Territories.

3.8 Federal government, employees of general government by location and sex, 1977 and 1978

Location	September 1977			September 1978		
	Male	Female	Total ¹	Male	Female	Total ¹
St. John's, Nfld.	2,203	599	2,802	2,272	655	2,927
Halifax, NS	9,094	2,817	11,911	8,770	2,519	11,289
Saint John, NB	1,048	383	1,431	1,066	394	1,460
Quebec, Que.	5,723	1,838	7,561	5,743	1,915	7,658
Montreal, Que.	19,645	7,717	27,362	19,401	7,318	26,719
Chicoutimi-Jonquière, Que.	290	67	357	301	76	377
Ottawa, Ont.-Hull, Que.	43,327	31,519	74,847	42,637	31,434	74,071
Toronto, Ont.	16,947	8,483	25,430	16,968	9,104	26,072
London, Ont.	1,804	861	2,665	1,778	884	2,662
Hamilton, Ont.	2,036	985	3,021	2,080	1,017	3,097
Windsor, Ont.	1,039	499	1,538	1,028	509	1,537
Kitchener-Waterloo, Ont.	975	440	1,415	968	454	1,422

3.8 Federal government, employees of general government by location and sex, 1977 and 1978
(concluded)

Location	September 1977			September 1978		
	Male	Female	Total ¹	Male	Female	Total ¹
St. Catharines-Niagara, Ont.	814	394	1,208	832	397	1,229
Thunder Bay, Ont.	801	264	1,065	783	303	1,086
Sudbury, Ont.	417	301	718	428	319	747
Oshawa, Ont.	260	129	389	258	127	385
Winnipeg, Man.	5,511	3,138	8,649	5,372	3,188	8,560
Regina, Sask.	1,451	826	2,277	1,445	880	2,325
Saskatoon, Sask.	1,085	617	1,702	1,156	697	1,853
Edmonton, Alta.	4,027	2,998	7,025	4,064	3,216	7,280
Calgary, Alta.	2,738	1,859	4,597	2,707	1,930	4,637
Vancouver, BC	8,459	4,461	12,920	8,427	4,558	12,985
Victoria, BC	4,332	1,253	5,585	4,262	1,291	5,553
Other locations	52,837	23,474	76,313	50,435	22,838	73,276
Total	186,863	95,922	282,788	183,181	96,023	279,207

¹Includes 3 employees in 1977 and 3 in 1978 whose sex was not specified on pay documents.

Sources

- 3.1 English Journals Branch, House of Commons.
- 3.2 Clerk of the Senate.
- 3.3 House of Commons Division, Department of Supply and Services.
- 3.4 - 3.6 Office of the Chief Electoral Officer.
- 3.7 Public Finance Division, Social Statistics Field, Statistics Canada.
- 3.8 Information Services Directorate, Public Service Commission.

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Population growth

4.1

The most fundamental fact about a population is its rate of growth which affects almost every aspect of the national life. The opening up of a new continent and the gradual evolution of an industrial and urban economy form the historical background for population growth in Canada. Several demographic elements have combined to produce this growth: births, deaths, immigration and emigration, which are the processes, or components, of population change.

The early period

4.1.1

The population of the area now known as Canada (excluding Newfoundland) grew from a handful of French colonists in the early 17th century and an unknown number of native Indians and Inuit to about 2.4 million in 1851 and 3.7 million at the first Census of Canada in 1871. Estimates suggest that there were about 136,000 Indians in 1851.

In the early settlement years the immigrant population grew rapidly while the native population remained almost stationary or declined as a result of warfare and disease. Between 1681, when the number of settlers passed the 10,000 mark, and 1851 the average annual growth rate of the non-native population in each decade varied between 1.6% and 4.5%; the average annual growth rate for the whole period was 3.2%.

The decade 1851-61 was one of surging expansion, with an average annual growth rate of 2.9% (Table 4.1). About 23% of the population increase was due to net migration; over 350,000 immigrants arrived and there was little emigration. A long period of slow growth followed. Between 1861 and 1901 the average annual growth rate was closer to 1% due to heavy emigration resulting in a net migration loss (Table 4.2). Emigrants included elements of both the Canadian and foreign-born populations. While many immigrants continued to come to Canada, a large number re-emigrated to the United States where prospective settlers found more favourable economic and climatic conditions. The westward movement in the United States attracted not only settlers from many parts of that country, but from Canada as well.

Recent trends

4.1.2

The beginning of the present century witnessed a flood of immigrants which helped raise the growth rate to 3% a year during 1901-11. Over 1.5 million immigrants entered Canada in this decade, as many as had arrived during the previous 40 years, and over 44% of the population increase was due to migration gain.

Following this phenomenal development, the intercensal rate of increase dropped during each successive decade until it reached a low of 10.9% during 1931-41. Reduced birth rates during the economic depression seriously affected population growth; immigration was negligible, and there was a net migration loss of about 92,000 persons.

After 1941, population growth again accelerated, reaching a near-record expansion rate of 30.2% in 1951-61, nearly three times that in 1931-41. Part of the increase was due to the addition of Newfoundland in 1949, but the surge in birth rates and the upswing in immigration during the immediate post-war years were the main factors.

After 1956 population growth declined from an average rate of 2.8% a year in the 1951-56 intercensal period to 2.5% in 1956-61, then to 1.9% in 1961-66 and 1.5% in 1966-71. The average annual rate of population growth dropped further in the 1971-76 intercensal period to 1.3%. Preliminary postcensal population estimates indicate that this gradual decline has continued following the 1976 Census. By July 1, 1979 Canada's estimated population was 23,690,500, an increase of 191,600 over July 1978.

Future prospects

4.1.3

The dominant component of population growth in Canada since 1851 has been natural increase (births minus deaths). Although this trend is likely to continue for some time,

migration is assuming an increasingly important role as the rate of natural increase declines. The birth rate will continue to be a dynamic and crucial factor of growth. Moreover, fluctuations in birth rates can create major economic and social problems. For example, although the post-war baby boom is long past, society is now feeling the impact of this generation on the labour market and other aspects of the national economy. Similarly, problems associated with the sharp drop in the birth rate since 1957 are being felt by school systems as fewer children enter school.

The tempo of future growth depends mainly on whether the total fertility rate, which is now below the replacement level of 2.1 births, will remain constant, fall or rise. A fertility rate below the replacement level does not mean that Canada will soon begin to decline. Calculations show that even if the fertility rate continued to decline to a level of 1.7 births per woman by 1991 and net migration were zero, the population would continue to grow until about the year 2010, when the death rate would exceed the birth rate and the population would begin to decline. The long period of continued growth may be attributed to the current high percentage of young people who are moving into the child-bearing age groups.

Table 4.3 summarizes the results of two of four new population projections for Canada prepared under different assumptions of fertility and migration. The two are based on the highest and lowest fertility assumptions used in the four projections. For a full account of the methodology and results of the projections, see *Population projections for Canada and the provinces, 1976-2001* (Statistics Canada Catalogue 91-520).

Projection 1 uses the highest fertility assumption of 2.1 children per woman by 1991, and a net migration gain of 100,000 a year. Under these assumptions, the total population would increase from 22.9 million in 1976 to 28.1 million in 1991 and 30.9 million by 2001. On the other hand, projection 4 is a low growth projection based on an assumed fertility rate of 1.7 by 1991, and a net migration gain of 50,000 a year. This projection yields a total population of 26.5 million by 1991 and 28.1 million by 2001. Extensions of these projections beyond the year 2001 indicate that, under these assumptions, the population would be between 37 million and 29.4 million by 2026.

These projections indicate that the rate of population growth is expected to decline. During the 25-year period 1976-2001, the population of Canada would increase by between 22% and 35% of its actual size compared to a growth of 64% during 1951-76. Past fluctuations in the fertility rate and a continued slowdown in population growth will result in an aging of Canada's population. By 2001, 11% to 12% of Canada's population is expected to be 65 or over compared to under 9% in 1976. During the first quarter of the next century aging will be even more pronounced as the baby boom cohorts reach retirement age. By 2026 between 16% and 19% of the population may be 65 or over.

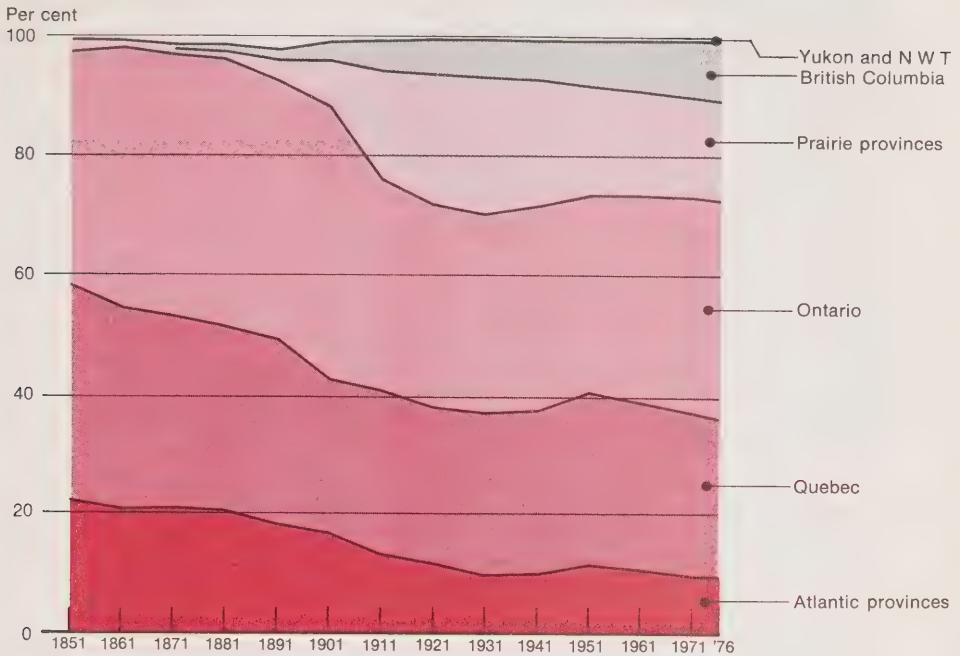
At the provincial level past growth rates have varied both over time and from one area to another primarily due to differences in fertility and migration. As natural increase declines and differences between the provinces narrow, migration plays an increasingly important role in shaping the geographic distribution of the population. Although there is general agreement that migration is the outcome of a variety of demographic, socio-economic and political factors, there is a lack of systematic knowledge on the determinants of the volume of migration and its fluctuations over time. Consequently there is much uncertainty concerning future growth patterns.

4.2 Population distribution

Decennial and quinquennial censuses of Canada make possible periodic assessments of the nation's social and economic conditions and provide data on the distribution of population for many types of geographical, political and statistical areas. Used as benchmarks, the census counts enable annual estimates to be made for provinces, counties and metropolitan areas.

Decennial census. The basic legal reason for the decennial census is to enable a redistribution of seats in the House of Commons. Under the terms of the Electoral Boundaries Readjustment Act, the census must provide population counts by electoral districts. Those from the 1976 Census of Canada are shown in Chapter 3, Tables 3.4 and

Distribution of population by region, 1851-1976



Note: Atlantic includes Newfoundland from 1951.

3.5, according to the electoral district boundaries established by the 1976 Representation Order.

Historically, a census of population was taken every 10 years, in 1851 and thereafter, and this pattern was continued after Canada's Confederation in 1867. Thus the 1981 Census is the 12th in a series of decennial censuses since Confederation.

Quinquennial census. In 1956 a new census was added, to keep statistical information abreast of the demographic and socio-economic factors that form the foundation for decision making in both private and public sectors. These censuses would be taken every fifth year between decennial censuses.

For the third quinquennial census, every person whose usual place of residence on June 1, 1976 was in Canada was asked questions covering age, sex, marital status, relationship to head of household, and mother tongue (the language first learned and still understood). Housing type and tenure were asked for each household. Sampling was also used; persons 15 and over of every third private household provided answers for school attendance, level of schooling, labour force activity and migration (place of residence five years ago).

Plans for the 1981 Census incorporated questions on the topics for the 1976 Census as well as inquiries concerning fertility, language use, occupation, industry, income, and a series of questions on housing.

The census is a principal source of information for measuring social and economic change, and for detecting those needs which necessitate the development and implementation of policies and programs such as regional development, health and welfare programs, education facilities, immigration, low income housing and transportation networks.

Provincial population trends, 1951-76. Ontario, Alberta, British Columbia and the Northwest Territories had growth rates higher than national figures in all five-year periods between 1951 and 1976 (Table 4.4). However, a decline in the rate of growth occurred in all provinces as birth rates began to fall in the mid-1950s. The most spectacular change took place in Quebec where the rate of growth declined by about 76% between 1951-56 and 1971-76 (from 14.1% to 3.4%).

The lowest growth rates for 1971-76 were in Saskatchewan, Quebec, Manitoba and the Atlantic provinces. Saskatchewan registered a decline while the Northwest Territories had the highest growth rate (22.4%) followed by Yukon, Alberta and British Columbia (12.9% each) and Ontario (7.3%).

Provincial estimates. In addition to the five-year census, estimates are constructed for the total population of Canada and for each province on both an annual and quarterly basis. The estimates of population begin with the preceding census counts. Births of each year are added and deaths subtracted; immigrants are added and an estimate of emigrants subtracted. Family allowance statistics showing the number of migrant families by province are used as a basis for estimating interprovincial migration. The next census serves as a basis for revision of all annual population estimates of each intercensal period. Table 4.6 shows population by province for selective years, with 1979 preliminary estimates.

Cities, towns and villages. As at June 1, 1976, some 67.4% of Canada's population lived in 2,079 centres classified as incorporated cities, towns and villages. These are grouped into 13 broad size categories in Table 4.7. Canadian cities and towns having a population of over 50,000 in 1976 are listed in Table 4.8 together with figures for 1966 and 1971. The date of incorporation to their present status is indicated also.

Census terms. A census agglomeration (CA) is an area comprised of at least two adjacent municipal entities, each at least partly urban. Its urbanized core is a continuous built-up area including the largest city and, where applicable, the urban part of surrounding municipalities, the urban fringe and rural fringe. A CA with an urbanized core of 100,000 or more, based on previous census figures, is called a census metropolitan area (CMA). Usually the CMA or CA takes the name of its largest component city.

Metropolitan areas. For census purposes a metropolitan area represents the main labour market of a continuous built-up area having a population of 100,000 or more. The growth of 23 census metropolitan areas appears in Table 4.9. Populations of 22 of these areas in earlier censuses were adjusted to conform to the boundaries delineated for the 1971 Census and a 23rd census metropolitan area, Oshawa, was added; population figures from the 1971 Census were adjusted to conform to the 1976 Census boundaries for this area. The 1976 Census population figures of all 23 areas were based on boundaries of the 1976 census metropolitan areas.

The proportion of Canada's population in the major metropolitan centres increased steadily and over one-half (55.7%) resided in the 23 metropolitan areas as defined for the 1976 Census. Calgary CMA showed the highest rate of growth in the period 1971-76 at 16.5%, followed by Kitchener at 14.1% (based on 1976 areas). The greatest gains in numbers were registered by Toronto at 175,058 and Vancouver at 83,996. The Toronto CMA became the largest in Canada, with a population of 2,803,101, some 7.7% more than in 1971. Montreal was close behind at 2,802,485, showing a growth of 2.7% since 1971 (Table 4.9).

Because of the growing interest in the expanding metropolitan areas a series of intercensal estimates was begun in 1957. Births in the metropolitan areas were added to the census population and deaths subtracted. Immigrants reporting these metropolitan areas as places of destination were added and allowances made for losses by emigration. Also, net internal migration for these areas was estimated from family allowances data.

4.2.1 Population density

At 2.49 persons a square kilometre in 1976, Canada's average population density still ranks among the lowest in the world. Table 4.10 shows that if Yukon and Northwest

Territories were omitted from this calculation, there would be 4.21 persons/km² in 1976 compared to 3.67 persons/km² in 1966 and 2.95 persons/km² in 1956. However, such average density figures over all types of land terrain and open spaces in the country or in individual provinces obscure the high urban densities which can reach close to 7,722 persons/km² as in Montreal and Toronto. Moreover, the highest provincial densities are not necessarily found among the provinces with the largest populations. For example, the highest average density of any province is that of Prince Edward Island (20.90 persons/km²) which has the smallest population and represents an anomaly resulting from its limited land area rather than from heavy concentrations of population. In contrast, the far more populous British Columbia, with its vast mountainous regions and areas of sparse population, has an average density of only 2.65 persons/km².

Urban and rural

4.2.2

The urban population was defined in the 1976 Census as all persons living in an area having a population concentration of 1,000 or more and a population density of at least 386 a square kilometre. All the remaining population was classified as rural.

Over 75.5% of Canada's population live in an urban environment, with the degree of urbanization ranging from 37.1% in Prince Edward Island to 81.2% in Ontario. In comparison with the national average, only Ontario, Quebec and British Columbia were more highly urbanized (Table 4.11).

The rural population, 24.5% of the Canadian total in 1976, is classified as non-farm or farm. The rural farm population was defined for census purposes as persons living in rural areas on an agricultural holding of at least 0.4 ha (hectares) with sales of agricultural products amounting to \$1,200 or more during 1975. The rural non-farm category in 1976 accounted for 20% of the population, compared to 4.5% for the rural farm segment.

Demographic and social characteristics

4.3

Age, sex and marital status

4.3.1

The distribution of a population by age, sex and marital status represents the effect of the most fundamental variables of vital trends: births, deaths, marriages, and dissolutions of marriages. Social and economic factors, by their effects on vital events and migration, also influence this distribution. An unbroken series of census data is available as far back as the first Census of Canada in 1871; only recent trends are summarized here.

More females than males. In 1976, for the first time in the history of Canadian census-taking, the number of females exceeded that of males (Table 4.12). A total of 11,449,525 males and 11,543,080 females were recorded giving a sex ratio of 99.2 males for every 100 females.

Before 1976, with the exception of 1971 when the sex ratio was almost balanced (at 1,002 males per 1,000 females), all other censuses showed Canada's population as being male dominated. In 1961, for example, the ratio was 102 males for every 100 females. The historical data show that the sex ratios recorded in decennial censuses of 1851 through 1961 fluctuated in the range of 102.2 to 112.9.

Higher death rates among males has an important effect on the sex ratio. Although more boys are born than girls (in 1976, 105 boys were born for every 100 girls), mortality is higher for males than for females. Because most important mortality changes have benefited women more than men, life expectancy at birth has increasingly favoured women.

Another factor for the variations in sex ratios has been immigration which is generally male selective. This was particularly responsible for the upward trend in sex ratios between 1881 and 1911. However, the change in the sex pattern of migration shows increasing female immigrants in recent periods.

Fewer children, more elderly. Two of the most striking changes in the structure of Canada's population are the declining proportions of children up to 5 years and the

growing proportions of persons over 65. Young children formed 14.7% of the total population in 1961; by 1976 their proportion had declined to 9.2%. During the same period, the proportion of elderly persons increased from 7.6% to 8.7%; in fact, the population over 65 has increased by 43.9% over the 15-year period, while the population in general increased by only 26.1%. This trend was emphasized in the five years 1971 to 1976 when the population over 65 increased by 14.8% and the population as a whole rose by 6.6%.

In other words, the proportion of the elderly is increasing and growing faster than the population in general. In 1901 only five people in every 100 were over 65. By 1976 the proportion had increased to almost nine in 100. The population over 65 in 1976 was seven times larger than in 1901, while population in general was only four times larger.

There are three main causes for these changes. Birth rates declined from about 30 per 1,000 in the early 1900s to a low of 15.5 per 1,000 in 1977. The age level of thousands of immigrants who arrived earlier in the century (2.6 million between 1911 and 1931) is now over 65. Life expectancy has been increasing (from an average of 61 to about 73 years between 1931 and 1971) due to medical advances and improvement in the overall standard of living.

The adult population (generally regarded as 15-64 years) increased substantially, with a gain of 1,651,000 or 12.3% in the 1971-76 period. This group comprised 65.6% of the total population in 1976 compared with 62.3% in 1971 and 59.4% in 1966.

The growth of the junior working ages (20-34) is of particular significance in the context of Canada's employment situation. In 1976 the count for this population group was 5,754,000, compared with 4,779,000 in 1971, a 20.4% increase. Furthermore, of the total 1971-76 population increase of 1,424,000 persons, the increase in the junior working ages accounts for as much as 68.5%. This group in 1976 corresponds mainly to the children born in the high-birth-rate years following World War II.

Marital status. The marital status composition of the 1976 population of Canada indicates increasing proportions of persons married (1976, 47.7%; 1971, 45.3%) and divorced (1976, 1.3%; 1971, 0.8%); a decreasing proportion of persons never married (1976, 46.4%; 1971, 49.5%); and a fairly stable proportion of persons widowed (1976, 4.5%; 1971, 4.4%). Generally, these trends also apply to each sex separately.

The most dramatic change concerns Canada's divorced population which increased from 175,100 in 1971 to 302,500 in 1976 (a 73% increase); divorced females increased from 100,800 in 1971 to 183,500 in 1976 (an 82% increase). This trend, the beginning of which was observed in 1971, reflects the more liberal divorce laws of 1968 as well as a change in the social acceptability of divorce.

The overwhelming number of widows, (853,900 or 82%) compared to widowers (189,700 or 18%) is a consequence mainly of higher age-specific rates of both mortality and remarriage among males than among females.

Analyses of marital status composition are most instructive when conducted in conjunction with sex and age. Two major findings follow. The years 1971-76 saw a decline in the proportion of married persons in the age range 25-34 and a corresponding increase in the proportion of single persons in that age range. (Data by quinquennial age group confirm this finding for virtually the entire young adult population.) The implication is that the 1971-76 increase in the proportion married in the population as a whole (as noted above) is a consequence of the changing age structure, rather than of a tendency to marry at a younger age. The same applies to the 1971-76 decrease in the proportion single in the population as a whole.

In connection with the recent decline in birth rates, the percentages of married women in the prime child-bearing ages 20-39 are: 1976, 11.6%; 1971, 10.6% and 1966, 10.2%. (Table 4.15 reports the figures for the age group 25-34, which show a similar trend.) That birth rates have been declining even though the population in the prime child-bearing group has increased further emphasizes the drop in birth rates.

4.3.2 Language

In the 1976 Census, a question on language asked for mother tongue, the language first spoken in childhood and still understood, with spaces to mark English, French,

German, Italian, Ukrainian, or other languages. The 1971 Census also asked a question on the language most often spoken in the home.

Mother tongue. The proportion of the Canadian population reporting English mother tongue increased from 60.2% in 1971 to 61.4% in 1976, while those reporting French declined from 26.9% to 25.6%. Chinese and Portuguese showed significant advances, while Ukrainian, German, Dutch, Polish and Yiddish were among those registering declines.

The relative gains in English mother tongue over the 1971-76 period occurred mostly in the western provinces at the expense of others such as Ukrainian, German and Polish, as descendants of earlier immigrants reported English as their mother tongue to a greater extent than in previous decades.

A not stated category in the 1976 data of Table 4.17 makes direct comparisons between 1971 and 1976 data problematic. In 1971, persons who did not report a mother tongue were assigned a language. Consequently, the 1976 counts are lower for any given language than they would have been if the 1971 procedure had been followed.

Official language. Table 4.18 shows census figures on the population reporting the ability to speak one or both of Canada's two official languages. In 1971 a total of 67.1% were able to speak English only, 18% French only, and 13.4% were bilingual. There was a slight increase in the proportion able to speak both English and French over 1961, when it was 12.2%.

Language spoken in the home. This question was introduced in the 1971 Census on the recommendation of the Royal Commission on Bilingualism and Biculturalism and other groups. It added insight into the languages of Canada since some persons, particularly immigrants, did not indicate either of the two official languages as the one

A declining birth rate and a growing proportion of elderly persons had an impact on the structure of Canada's population at the beginning of the 1980s. Fewer marriages, more divorces, more lone parent families and more one-person households were other trends recorded.

they spoke most often at home. Conversely, many with a non-English mother tongue no longer used their mother tongue. Table 4.16 indicates that 67% of the population spoke English most often in their homes, but only 60.2% reported English as their mother tongue.

Ethnicity, religion, birthplace

4.3.3

Because of the varied nature of Canada's population, the measurements provided by decennial censuses on such subjects as ethnic and religious composition are of widespread interest and in continuous demand. Tables 4.19 to 4.21 show summary figures from the 1971 Census, with comparative data for earlier years.

Ethnic groups. The ethnic composition of Canada has changed considerably because of many factors, including differences in the flow and source of immigrants. Trends have been characterized by a decline in the proportions of British Isles groups and a corresponding increase in European ethnic groups other than French. For example, the former groups had dropped from 57% of the total population in 1901 to 44.6% by 1971, whereas other European groups rose from 8.5% to 23%. The French ethnic group remained relatively stable, varying from 30.7% in 1901 to 28.7% by 1971.

Religious denominations. Census figures do not measure church membership or the degree of affiliation with a particular religious body. Respondents were asked to enter a specific religious denomination, sect or community, with the opportunity to report no religion if so desired. Three out of every four persons in Canada in 1971 reported one of the three numerically largest denominations — Roman Catholic, United Church or

Anglican. Largest relative gains since 1961 occurred in such groups as Jehovah's Witnesses and Pentecostal. None of the major denominations registered numerical declines in the 1961-71 period, but the Anglican, Baptist, Lutheran, Presbyterian and United Church groups were among those showing percentage losses relative to the total population.

Country of birth. The proportion of the population born outside Canada ranged from a high of 22% in the period 1911-31 to a low of 15% in 1951 following a period of lower immigration and rising birth rates. Persons born in the United Kingdom comprised over 11% of the population in 1911 and 1921, but this declined gradually to 4.3% by 1971 because of the rising proportions of Canadian-born and immigration from other European countries. Persons born in the latter countries rose from 5.6% of Canada's population in 1911 to 7.8% in 1971.

4.3.4 The native peoples

Many centuries before the first European settlers arrived, the country that is now Canada received immigrants in the prehistoric period. Present-day Inuit and Indians are the descendants of these early settlers but as a result of heavy immigration by other groups they now represent less than 2% of Canada's population. Administration relating to the affairs of the Indian and Inuit peoples is described in Chapter 3. Demographic data on their numbers and locations, from the 1971 Census summary figures, show a total of 295,215 native Indians and 17,550 Inuit. The former figure includes both registered or status Indians and non-status.

From a later source, there were 295,898 persons registered as status Indians by the Indian affairs and northern development department at December 31, 1977. These persons are entitled to registration in accordance with the terms of the Indian Act. They comprise 573 bands who occupy or have access to some 2,233 reserves having a combined area of about 2.6 million hectares. Membership of these bands is distributed among the provinces and territories (Table 4.22). The 29 Indian bands in Yukon and Northwest Territories are located on seven reserves and in 46 settlements that have not been formally designated as reserves. There are at present no Indian bands in Newfoundland.

About two-thirds of Canada's Inuit reported in the 1971 Census live in communities in the Northwest Territories (11,400), and the remainder mainly in Arctic Quebec (3,800), Labrador (1,000), and Northern Ontario (800). As in the rest of Canada, the Inuit birth rate has been declining, but at a faster rate and from a much higher level. By 1971 the birth rate for the Inuit population in the Northwest Territories had decreased to about 38 per 1,000 as compared with the Canadian average of 17 per 1,000.

4.4 Households and families

4.4.1 Household size and type

A household, as defined in the census, consists of a person or a group of persons occupying one dwelling, usually a family with or without lodgers or employees. It may consist of a group of unrelated persons, of two or more families sharing a dwelling, or of one person living alone. The statistics in this section pertain to private households only. Collective households such as hotels, motels, institutions of various types (usually considered to contain 10 or more persons unrelated to the household head) have been excluded as well as households outside Canada for the 1971 and 1976 data.

Tables 4.23 - 4.26 give summary statistics showing, among other details, growth in the number of households, a trend to smaller household groups and an increase in one-person households; there were increases of nearly 453% in households with divorced heads, of over 99% in the number of households with never-married heads, and of 41% in the number with younger heads (under 25).

The number of private households in Canada increased to 7.2 million in 1976 from 5.2 million a decade earlier, a gain of 38%. The population rate of increase was

considerably lower at 14%. During the 1971-76 period, growth rates in the number of households ranged from 8.7% in Saskatchewan to 23.9% in British Columbia and 30.2% in Yukon and Northwest Territories. New Brunswick and Alberta had growth rates higher than the national average of 18.6%.

Households by size. In the 1976 Census, the average Canadian household had 3.1 persons as compared to 3.5 in 1971 and 3.7 in 1966. In all these censuses, the average number of persons per household was highest in Newfoundland. While the decline in average size of households during 1966-71 was seen mainly in the Maritime provinces and Quebec, a further decline during 1971-76 was realized in all provinces.

Households by type. All private-type households are divided for census purposes into two basic categories: family and non-family households.

Family households increased from 4.4 million in 1966 to almost 4.9 million in 1971 and to 5.6 million in 1976, but dropped proportionately from 84.5% in 1966 to 81.7% in 1971 and to 78.6% in 1976. The proportion consisting of two or more families dropped from 2.5% in 1966 to 1.3% in 1976, indicating a decrease in overcrowding in households. Non-family households, on the other hand, increased in number and in proportion to total households; this is mainly due to the increase in the proportion of one-person households from 11.4% in 1966 to 13.4% in 1971 and to 16.8% in 1976. Thus, new family formation alone was not responsible for the overall increase in the number of households; some families and family persons who previously shared accommodation now maintain their own households.

Households by age and marital status of head. Although total households increased by 18.6% between 1971 and 1976, the number of households with heads under 25 grew by 41.0%, reaching 584,270 in 1976 from 414,470 in 1971. By province, this group increased by as much as 60.3% in Alberta and 54.5% in Saskatchewan. Yukon and the Northwest Territories registered the largest growth in households with heads 65 and over, increasing 36.6%. Quebec followed with an increase of 25.0% from 1971. Nationally, the proportion of households with heads 65 and over increased from 16.2% to 16.4%.

Analyzed by marital status, the most significant increase during the 1966-76 period was recorded by households with divorced heads, at 452.9%; the proportion of households with divorced heads more than tripled from 0.8% in 1966 to 3.1% in 1976. At 99.3%, the increase in households with single never-married heads was the next highest. The rate of increase over the decade was 34.8% for households with widowed heads and 29.1% for households with married heads (including separated).

Family size and composition

4.4.2

A family, as defined in the census, consists of a husband and wife without children or with children who have never married, regardless of age, or a lone parent with one or more children who have never married, regardless of age, living together in the same dwelling. Adopted children and stepchildren have the same status as own children.

The 1976 family data pertain to families in private households only. The number of families in Canada increased to 5.7 million in 1976 from 4.5 million in 1966. Following the patterns of provincial population growth, and reflecting the factors of migration, the largest rate of increase occurred in Yukon and Northwest Territories (69.3% in the 1966-76 period), followed by British Columbia (41.4%) and Alberta (35.5%).

Families by size. The number and average size of families are given in Table 4.27 by province for 1966, 1971 and 1976. The average size dropped to 3.7 persons between 1966 and 1971, and to 3.5 in 1976 reflecting declining birth rates. The largest reductions in average family size occurred in Quebec (from 4.2 persons in 1966 to 3.5 in 1976), New Brunswick (from 4.3 to 3.7), Newfoundland (from 4.6 to 4.0) and Yukon and Northwest Territories (from 4.5 to 3.9).

Family structure refers to the classification of census families into husband-wife families and lone parent families. Husband-wife families consist of a husband and a wife (with or without children), or persons who live common law (with or without children).

Lone parent families consist of a parent, regardless of marital status, with one or more children living in the same dwelling.

Husband-wife families. Table 4.28 shows that 90.2% of Canadian families in 1976 were husband-wife families, a decrease of 1.6% from 1966. For the analysis of family data, a subdivision into husband-wife families in Table 4.29 shows the distribution by age of husbands and of wives. For statistical tabulating purposes, the husband was considered the head of the family in 1971 and earlier censuses.

Lone parent families. Lone parent families increased both in number (371,885 to 559,335) and in proportion of total families (8.2% to 9.8%) over the decade. Table 4.29 classifies such families into male lone parent families and female lone parent families. The proportion of female lone parent families increased from 6.6% to 8.1% while the proportion of male lone parent families increased only from 1.6% to 1.7%. This reflects an increase in broken families in Canada because the percentage increase of female lone parent families was 171.6% in the age group 25-34 and 68.2% in the age group 35-44, the ages at which most divorces were granted. An increase of 163.8% was recorded for the under 25 age group. The greatest proportion of male lone parent families fell in the 45-54 age group followed by the 35-44 age group.

Families by mother tongue of husband, wife and lone parent. For census purposes, mother tongue is defined as the first language learned that is still understood. The proportion of husbands, wives and lone parents reporting English, French, or other mother tongue in the 1976 Census showed a pattern fairly similar to that for the population as a whole (Table 4.30). For example, 61.4% of the Canadian population reported English as the mother tongue, as compared with 58.7% of all husbands, wives and lone parents. The corresponding proportions for French mother tongue were 25.6% and 25.4%. However, mother tongues other than English or French were reported by only 11.0% of the total population, but by 14.1% of all husbands, wives and lone parents. For the Canadian population, 1.9% did not state mother tongue while the not stated category was 1.8% for husbands, wives and lone parents.

Children in families. In 1976 the definition of children was expanded to include all persons, regardless of age, who were living with their parent(s) or guardian(s) at the time of the census. Unrelated wards or foster children, however, were designated as lodgers rather than children. Children are classified into selected age groups which roughly correspond to pre-school age (under six), elementary school age (6-14), secondary school age (15-17), college or working age (18-24) and 25 years and over (Table 4.31).

The 1976 data showed the following distribution by age group of children; under six, 23.0%; 6-14 years, 41.4%; 15-17 years, 14.9%; 18-24 years, 16.6%; and 25 years and over, 4.1%. Total children in families in private households within Canada for all age groups decreased from 9.2 million in 1971 to 8.9 million in 1976, and the average number of children per family declined from 1.8 to 1.6.

4.5 The vital components of population change

Vital statistics are an indispensable tool to the measurement and interpretation of population change. They provide information such as the rate at which population changes by natural means, men and women marry and have children, or marriages are dissolved, and population increases due to birth and decreases due to death. The statistics are derived from the records of births, deaths, marriages and divorces registered in the provinces and territories.

History of vital statistics. A historical summary of vital statistics data for Canada and the provinces back to 1921 is contained in *Vital statistics, preliminary annual report* (Statistics Canada Catalogue 84-201). Estimates of birth, natural increase, and death rates back to the mid-1800s by 10-year periods are given in the following sections.

Summary of principal data. Table 4.32 provides a summary of the principal vital statistics for 1976 and 1977 for Canada, the provinces and territories, with comparative

figures by five-year periods back to 1951-55. Table 4.33 shows similar data for urban centres of 50,000 population and over for 1976 and 1977 with comparative averages for 1971-75. More detailed information on vital statistics, including analyses of recent trends, is published annually in the Statistics Canada reports *Vital statistics, volume I, births* (Catalogue 84-204), *Vital statistics, volume II, marriages and divorces* (Catalogue 84-205), *Vital statistics, volume III, deaths* (Catalogue 84-206) and *Causes of death, provinces by sex and Canada by sex and age* (Catalogue 84-203). Certain unpublished data are available from Statistics Canada on request.

Births

4.5.1

Of all the demographic factors which produce changes in population (fertility, mortality, nuptiality, immigration, emigration), none exerts greater influence than the rate of reproduction or fertility. By comparison, the nation's mortality, which has reached low levels, could be considered fairly stable; the emerging patterns of births and consequent fertility rates may be expected to continue to be a dominant factor in determining the future demographic consequences for Canada.

Birth rates. No accurate figures on Canadian crude birth rates are available prior to 1921 when the annual collection of official national figures was initiated. However, the following rough estimates of the average annual crude rates of live births (per 1,000 total population) for each 10-year intercensal period between 1851 and 1921 may be inferred from studies of early Canadian census data: 1851-61, 45; 1861-71, 40; 1871-81, 37; 1881-91, 34; 1891-1901, 30; 1901-11, 31; 1911-21, 29.

The annual crude birth rates declined steadily from 29.3 in 1921 to a record low of 20.1 in 1937, recovered sharply in the late 1930s and rose during World War II to 24.3 in 1945. Following the war the rate rose to a high of 28.9 in 1947. Between 1948 and 1959 it remained remarkably stable at between 27.1 and 28.5, but has since declined dramatically to a record low of 15.4 by 1974. The rate for 1977 shows a slight decrease to 15.5 from 15.7 in 1976 and the emerging trend seems to be one of further decline. Provincial rates have followed this trend with some regional differences.

Since these crude birth rates are based on the total population they do not reflect the true fertility of the women in reproductive ages. A more accurate measure of fertility is one based on the number of women by age between the ages of 15 and 49 (Table 4.36; Section 4.5.2).

Age of mothers. The distribution of infants born alive in 1976 by age of the mother is given in Table 4.34. It shows that 69% of the live births in 1976 to all mothers were among women 20-29, another 14.8% to women 30-34, and only about 10.8% of births were to mothers under 20.

Order of birth. Table 4.34 also shows the order of birth of all live-born infants in 1976 according to the age of the mother. In 1976 the first births for mothers of all ages constituted 41.8% of all live births; births of fourth or higher order constituted 7.3%.

Stillbirths. The 2,691 stillbirths of at least 28 weeks gestation reported in 1976 represented a ratio of 7.5 for every 1,000 live births (Table 4.35). The stillbirth ratio has been cut by more than half over the past quarter-century. Ratios have been reduced more in some provinces than in others. The risk of having a stillborn child increases with the age of the mother. Although stillbirth rates for mothers of all ages have been declining, they continue to be much higher for older than for younger mothers.

Fertility rates

4.5.2

The sex and age composition of a population are fundamental factors affecting its birth rates. Since almost all children are born to women between the ages of 15 and 49, variations in the proportion of women in this age group to the total population will cause variations in the crude birth rate of different countries, or of different regions, even though the actual rates of reproduction or fertility of the women are the same. It is therefore an accepted practice for comparison purposes to calculate age-specific fertility rates, the number of infants born annually to every 1,000 women in each of the reproductive age groups.

Table 4.36 indicates that women in their 20s are the most reproductive. On the average, for every 1,000 women between 20 and 24, there were 110 infants born during 1976. Expressed another way, about one woman out of eight in that age group gave birth to a live-born infant. The highest rate is found in the 25-29 age group with an average of 129 for every 1,000. Another measure of fertility is the gross reproduction rate which represents the average number of daughters that would be born to each woman throughout her child-bearing ages (15 to 49) if the fertility rate of the given year remained unchanged during the whole of her child-bearing period. A rate of 1.000 indicates that, on the basis of current fertility and without making any allowance for mortality among mothers during their child-bearing years, the present generation of child-bearing women would maintain itself.

Canada has always had one of the highest gross reproduction rates among industrialized countries. Even at low birth rates in the 1930s the rate varied between 1.300 and 1.500 and since World War II has ranged from 1.640 in 1946 to a high of 1.915 in 1959. However, since 1963 the national gross reproduction rate has dropped sharply from 1.788 to 0.887 in 1976 — appreciably below the replacement level of 1.000. Among the provinces, British Columbia, Quebec, and Ontario had the lowest gross reproduction rates in 1976, all below the replacement level.

4.5.3 Natural increase

The excess of births over deaths, or natural increase, has been the main factor in the growth of Canada's population. Some idea of the rate of natural increase back to the mid-1800s may be obtained from the estimates of births and deaths which produce the following natural increase rates (per 1,000 population): 1851-61, 23; 1861-71, 19; 1871-81, 18; 1881-91, 16; 1891-1901, 14; 1901-11, 18; 1911-21, 16.

During the 1920s and early 1930s the birth rate declined much more rapidly than the death rate and the natural increase rate dropped to a record low of 9.7 in 1937. Higher birth rates during and after World War II and a continued declining death rate caused the natural increase rate to rise steadily from 10.9 in 1939 to a record 20.3 in 1954. After that there was a steady drop due to declining birth rates and the natural increase rate fell below 10 for the first time in 1971 at 9.5 and dropped further to 8.0 in 1974. It edged up slightly in 1976 to 8.4 but fell to 8.3 in 1977. Table 4.32 gives average rates of natural increase in the provinces for five-year periods from 1951 to 1975 and for individual years 1976 and 1977.

4.5.4 Deaths

The Canadian crude death rate is one of the lowest in the world (7.3 per 1,000 population in 1976). After a gradual decline over the past century, the rate appears to have levelled off since 1967. In the opinion of demographers, a further reduction in the crude death rate is likely to be small.

General mortality. No official crude death rates (rates per 1,000 total population) are available prior to 1921. However, studies of the early Canadian censuses resulted in the following estimated annual crude rates: 1851-61, 22; 1861-71, 21; 1871-81, 19; 1881-91, 18; 1891-1901, 16; 1901-11, 13; 1911-21, 13.

Typical of pioneer populations, Canada had high death rates in the mid-1800s with the crude death rate estimated between 22 and 25. It is assumed that while mortality was high at all ages, the rate among infants and children must have been particularly high. Even in 1921 the Canadian infant mortality rate was 102.1 per 1,000 live births. With increasing urbanization and improved sanitation and medical services, the crude death rate dropped by 50% from 22 to 11 between 1851 and 1930. It continued to decline to a low of 7.3 in 1970 and 1971, rising slightly to 7.4 in 1973 and 1974 and declining to 7.3 in 1976 and 7.2 in 1977.

Table 4.33 shows the number of deaths in urban centres of 50,000 population and over in 1976 and 1977, and average deaths a year for the period 1971-75.

Age and sex distribution of deaths. Since 1921 the mortality trend at all ages has been downward. One of the contributing factors has been the reduction in the mortality of infants and children. Between 1951 and 1976, death rates for infants and for children

under 5 years of age dropped by more than 60% (Table 4.39). Rates for the 5-14 age group also declined significantly. However, rates for boys and young men from 15 to 24 did not appreciably improve. Death rates for males over 25 were generally lower in 1976 than in 1951, though the magnitudes varied for different age groups. Rates for females of all ages declined substantially between 1951 and 1976.

Sharp reductions in male infant and child mortality and substantial declines in the female rates for all younger age groups have tended to raise the average age at death. In 1976 the average age for males was 64.3, while that for females was 70.1. The male median age at death was 68.9 and the female one was 75.6.

Causes of death. Cancer and cardiovascular diseases account for a larger proportion of deaths than before. On the other hand, deaths of infants, children and young adults from such diseases as pneumonia and tuberculosis have sharply declined.

Table 4.39 shows that the leading causes of infant death are radically different from the main causes of death at later periods. Accidents account for a significant number of male deaths for young adults. The majority of deaths among older males are due to cardiovascular diseases and cancer.

Accidents are also the primary cause of death among girls, with cancer being the leading cause for young and middle-aged women. Cardiovascular diseases and cancer are the leading causes of death for elderly women.

More information on causes of death is in Section 5.1.3 of Chapter 5, Health.

Infant death. Table 4.40 shows that death rates for both male and female infants (under one year of age) have been reduced by more than 60% since 1951. This is due to better prenatal and postnatal care, improved sanitation, the use of antibiotics and other preventive treatments, and the younger age patterns of child-bearing women.

The 1976 mortality rates for infants of both sexes varied among the provinces and territories with the rates for the Northwest Territories being substantially higher. The national death rate for all infants was 13.5, the lowest on record (Table 4.40).

Life expectancy

4.5.5

Life tables indicate the measures of life expectancy compiled from the death rates prevailing over a period. They assume that a given group of people (usually 100,000) born simultaneously in a particular year, are subjected through their lives to the age-specific death rates by age prevailing in that year, (or in respect of the official life tables to the average death rates for a three-year period centred around that year). The expected deaths in the group are calculated (in the case of a complete life table) for the first year of life, second year of life, and the diminishing group is followed for 100 or more years until all members are eliminated. Life expectancy at birth is calculated for the entire group and, subsequently, remaining life expectancy is calculated for the survivors at one-year intervals. The assumptions of such a life table are approximations to reality and the hypothetical cohorts in life tables do not represent any actual population. Usually, persons in an actual group born in the life-table year will have a higher life expectancy than those in the life-table group because during their lifetimes public health conditions will improve and standards of medical care will advance.

Seven official sets of life tables were published, based on deaths in the three-year period around each of the censuses of 1931, 1941, 1951, 1956, 1961, 1966 and 1971. The Canadian life-table values for the 1971 period are given for selected ages in Table 4.41. This table shows that at 1970-72 mortality rates 2,002 of 100,000 males born would have died in their first year with 97,998 surviving to one year of age, that 126 more would have died in their second year with 97,872 reaching their second birthday and so on, with 191 survivors at age 100. The probability of dying column represents the ratio between the population at each age and the number of expected deaths in the coming year. The expectation of life column shows the number of remaining years of life expected at each age, given the 1970-72 mortality rates.

Male probabilities of dying were higher than the corresponding female probabilities at all ages. Mortality rates and the probabilities of dying were lowest at the age of about 10 for both sexes. Then male probabilities rose rapidly, reflecting accidents to teen-age boys; female probabilities rose more gradually. Male mortality was fairly constant from

age 20 to the late 30s, and then increased steadily with advancing age. Female mortality rose slowly between 10 and 25 years, then more rapidly. About 11,200 of the male group would have died by age 50 as compared with roughly 6,600 of the female group, and 58,575 males would reach age 70 as compared with 75,995 females.

Life expectancy values over the 1961-76 period are shown in Table 4.42. By 1976 Canadian life expectancy at birth had reached an all-time high of 70.2 years for males and nearly 77.5 years for females. These figures are roughly comparable to the expectancies of other countries with highly developed programs of medical care. Because infant mortality is still quite substantial, life expectancies for male and female infants one year old were only slightly higher than expectancies at birth. Male expectancy at age 20 was 52.1 years, or 6.8 years below the corresponding female expectancy of 58.9. At age 40 the comparative expectancies were 33.6 for men and 39.7 for women. By age 65 the male expectancy had dropped to 13.9 years, with the female expectancy 4.1 years higher at 18.0 years.

Table 4.43 shows the life expectancies by province. The steady widening of the gap between male and female expectancies, evident at the national level, seemed to be continuing in every province to judge from the 1966, 1971 and 1976 figures. What was a small margin of two years in 1931 has since grown gradually to a difference of over six years between the average expectancies of men and women. Although life expectancy varies from province to province, generally being highest in Saskatchewan and lowest in Quebec, the gap between provinces has narrowed in recent years. The latest projections are based on a life expectancy of 72.8 years for males and 79.1 for females by 2001.

Life expectancy at birth has increased 15% for males and over 22% for females since 1931. Part of the reason for the rise in life expectancy has been the drastic reduction in the infant mortality rate (infant deaths per 1,000 births). In 1921 the infant mortality rate was 102.1; the 1976 rate was only 14.0, which was even lower than the US infant mortality rate of 15.1.

4.5.6 Marriages

In 1977, there were 187,344 marriages solemnized in Canada compared to 193,343 in 1976. The rate of marriage declined from 8.4 to 8.0 per 1,000 population. Alberta recorded 9.5 marriages per 1,000 population, down from 9.7 in 1976, but still the highest of any province (Table 4.32).

In 1977 the median age at marriage — the age above and below which half the marriages occurred — was 23.9 for bridegrooms and 21.7 for brides. Bridegrooms averaged 25.1 years, and brides 22.8.

Religious denomination. Some indication of the influence that religion has in selecting marriage partners is shown in Table 4.46. The majority of marriages in Canada were between persons of the same religious denomination. The proportions were higher for such denominations as Jewish and Roman Catholic and lower for others: Anglican, Baptist, Presbyterian and United Church.

4.5.7 Divorces

The number of decrees absolute granted in Canada has risen sharply as a result of the 1968 changes in divorce legislation. Divorces rose to over 57,155 in 1978 compared to an average of about 11,000 divorces per year over the period 1966-68. British Columbia's divorce rate was 326.7 per 100,000 population, and Alberta 310.4, the highest rates among the provinces. By comparison, Newfoundland and Prince Edward Island had the lowest rates, 75.0 and 110.7 (Table 4.47). Estimates based on divorce rates in 1971 indicate that about one-fifth of those persons who married between 15 and 25 (born during 1946-56) may obtain a divorce by the time they are 45.

Sex of petitioners. Background information shows that almost twice as many divorces were granted in 1977 to female petitioners as to males, 36,587 to 18,783. This represents a ratio of 51 divorces to male petitioners for every 100 to females.

Grounds for divorce. Statistics show that in 1977 adultery was the most frequent cause of divorce (22,649 cases), replacing separation for not less than three years (22,447

cases). Other alleged grounds for divorce and reasons for marital breakdown include mental cruelty (13,981); physical cruelty (11,221); desertion by petitioner for not less than five years (1,870); and addiction to alcohol (1,791).

Dependent children. Of the 55,370 divorces granted in 1977, 44.6% involved no dependent children. Divorces involving dependent children ranged from 55.8% in 1972 to 58.7% in 1977. Almost two out of every five of the latter cases involved one child only, and almost one-third of them involved two children.

Duration of marriage. The duration of marriage in 17.2% of the divorces in Canada in 1977 was less than five years and in 47.4% of the cases it was less than 10 years. The short-term trend over the past few years indicates a relative shortening of the average marriage period before divorce. In 1974 only 15.5% of the divorces involved marriages of less than five years and 43.7% to those of less than 10 years. The median duration of marriage in 1974 was 11.5 years compared to 10.5 in 1977.

Marital status. More than nine out of every 10 persons divorced in 1977 were involved in a first divorce. Around 6.5% of the divorces were to persons who were divorced at the time of their last marriage and less than 2% to those who were widowed.

Migration

4.6

Besides the vital components of population change (fertility, mortality, nuptiality), the flows of population across national borders (immigration and emigration) also affect the country's growth and demographic structure.

Immigration

4.6.1

Canada's immigration policy is based on the principle of non-discrimination and emphasizes the selection of immigrants who are likely to adapt to the Canadian way of life, making a positive contribution to economic and cultural development in Canada.

Canadian immigration officers apply standard norms of assessment to applicants from all parts of the world and, apart from sponsored relatives and refugees, select those with skills in short supply in Canada.

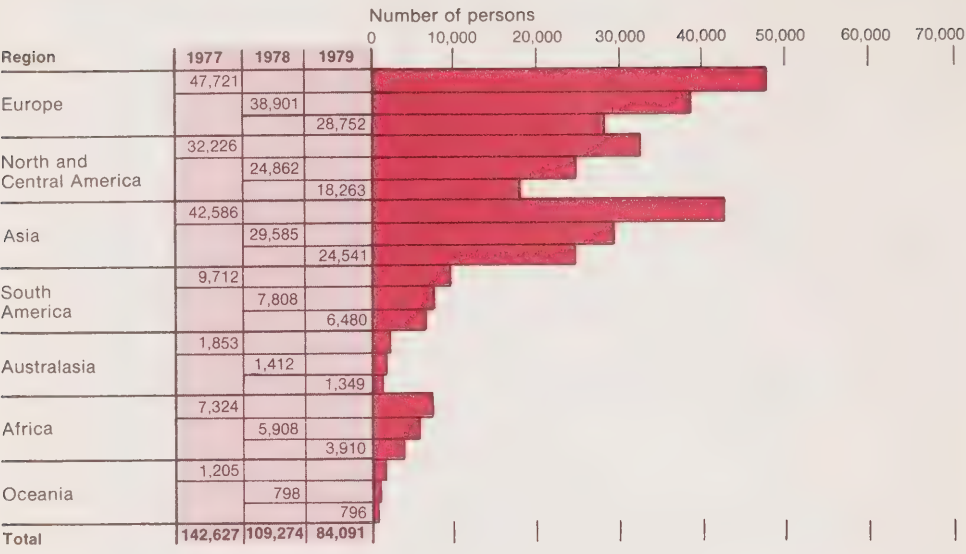
The employment and immigration commission also regulates the entry of temporary workers and foreign students planning to enrol in public or private institutions and examines millions of visitors who come to Canada each year as tourists or for family, social, cultural or other reasons. The commission facilitates the return of Canadian residents and enforces measures relating to public health, welfare of Canadians or national security.

The Immigration Act, 1976 proclaimed in April 1978, brought Canada's immigration policy into sharper focus than ever before. It stated, for the first time in Canadian law, the basic principles underlying immigration policy — non-discrimination, family reunion, humanitarian concern for refugees and promotion of national goals. The legislation links the immigration movement to Canada's population and labour market needs and provides for an annual forecast of the number of immigrants Canada can comfortably absorb, to be made in consultation with the provinces. The act establishes a new family class, allowing Canadian citizens and permanent residents to sponsor a wide range of relatives, confirms Canada's protective obligations to refugees under the United Nations Convention and establishes refugees as an admissible immigrant class. It requires that immigrant and visitor visas and student and employment authorizations be obtained abroad, and prohibits visitors from changing their status from within Canada.

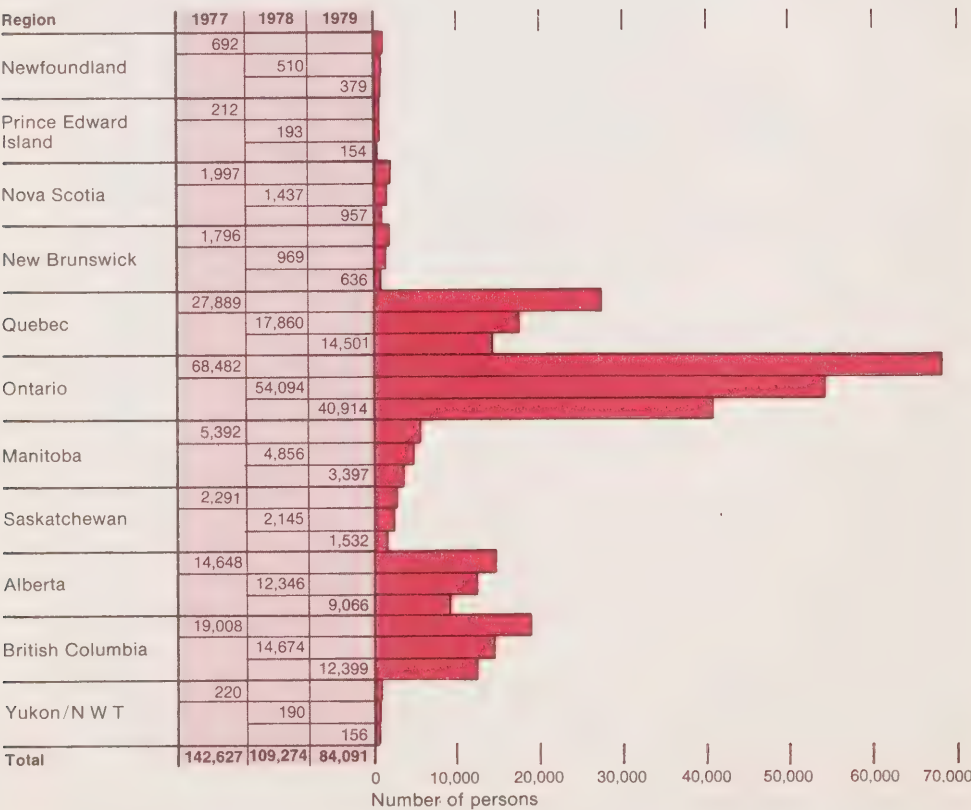
In recent years, Canada's concern for the displaced and the persecuted has been manifested in two types of refugee resettlement programs: an ongoing program operating continuously around the world, and special programs in response to urgent refugee or humanitarian situations.

Indochinese refugee program. Canada launched the largest single refugee movement in its history in July 1979, offering to provide homes for up to 50,000 Indochinese refugees in a two-year period through partnership arrangement between the federal

Where immigrants came from



And where they intended to go



Note: Fiscal year ending March 31.

government and private sponsors. Churches, service organizations, ethnic and immigrant aid groups across the country marshalled their resources to sponsor refugees or assist in helping them. By the end of 1979, some 5,457 voluntary groups had applied to sponsor about 29,233 refugees. Assistance available particularly through voluntary sponsorship and provincial services facilitates the social and economic integration of the refugees into Canadian communities. Sponsorship is providing geographical distribution throughout Canada, including rural areas which normally receive few immigrants. By the end of 1979 refugee aid groups, employers, employment counsellors and language instructors generally assessed the refugees favourably in their attitudes toward integration and becoming self-reliant.

There are Canada employment and immigration offices in more than 60 cities throughout the world, and examination of immigrants and visitors is carried out at more than 500 ports of entry in Canada.

Canada received 109,274 immigrants in 1977-78, a decrease of 23% from 1976-77. The extent of immigration to Canada in any period is affected by conditions at home and abroad. Immigrant arrivals for the period 1952-78 are shown in Table 4.52.

Origin of immigrants. In 1978 Canada received 86,313 immigrants from various countries of origin. Tables 4.53 and 4.54, showing the country of last permanent residence and of citizenship of immigrants, indicate that by world area Europe, Asia, North and Central America, Africa and Australasia contributed a lower proportion of the total immigration in 1978 than in the previous year. The British Isles was the largest source area for immigrants with 11,801 in 1978, followed by the United States with 9,945.

Destination of immigrants. On arrival in Canada, immigrants are asked to state their intended destination. According to these records, Ontario absorbed by far the highest proportion of arrivals during 1978 — 49% of both males and females. Quebec was the second most-favoured province of destination, receiving 17.5% of males and 15.7% of females, followed by British Columbia with 13.7% of males and 14.8% of females. The proportions intending to settle in the Prairie provinces were 17.8% for males and 16.9% for females, and in the Atlantic provinces, 3.0% for males and 2.5% for females. The provincial distribution has changed little from year to year over the past two decades.

Sex, age and marital status. The sex distribution of immigrants for 1974-78 is shown in Table 4.56. In 1978 males constituted 46.4% of the immigrants and adult females 53.6%. The number of female immigrants coming into Canada was higher than the number of male immigrants in every year from 1975 to 1978. Table 4.57 gives the marital status of immigrants, by sex and age group for 1977 and 1978.

Intended occupations. Some 35,211 persons were added to the labour force in 1978 compared with 47,625 in 1977. The remainder, those not destined to the labour force, were mainly dependents of immigrants or close relatives sponsored by individuals in Canada. Persons employed in clerical occupations represented the largest occupations group with 5,000 workers. Other major groups were: product fabricating, and assembling and repairing with 4,127; services with 3,634; professional and technical with 2,963; managerial and administrative with 2,697; and construction with 1,888.

Emigration

4.6.2

Since the only statement a Canadian resident may be required to file on leaving the country is his income tax return, one cannot know the actual number of Canadian residents who emigrate from Canada each year. However, a fairly accurate estimate of the number of Canadian residents who emigrated from Canada in intercensal periods can be obtained by using data from past censuses and statistics on births, deaths and immigration for the intercensal periods (Table 4.59). Preliminary annual estimates of emigration of Canadian residents in postcensal years are obtained from annual statistics on immigration to the United States and to the United Kingdom and an assumed annual volume (48,000) of migration from Canada to all other countries. These preliminary estimates are considered to be less accurate than the estimates for preceding years because of the different method used to obtain them.

Although the number of persons emigrating from Canada varies from one year to another, Table 4.59 shows a general decline since the 1961 Census. During the past 17 years, an average of 82,400 persons emigrated annually with the highest number (111,500) in 1967-68 and the lowest (62,300) in 1972-73. Preliminary estimates for recent years are among the lowest in the period, and indicate only 69,600 emigrants for 1976-77 and 70,200 for 1977-78.

4.6.3 Internal migration

As people move from one place to another within a nation, they set up patterns of migration which differ in intensity and directional flow. These internal movements have marked effects on regional economies and influence future population growth. Thus it is of value to measure these various migration streams, such as from rural to urban centres, from cities to suburbs, and from one province or economic region to another.

Migration by province of birth. Census figures on province of birth shed some light on internal migration flows by comparing the number of persons born in a given province with their present province of residence. Such figures do not indicate the periodicity of the migrating process, and apply only to the Canadian-born population presently living in a given province. Nevertheless they do reflect something of the major patterns of interprovincial movement over the years.

Data from the 1971 Census (Table 4.60) show that Ontario, Alberta and British Columbia were net gainers of Canadian-born migrants from other provinces, while the remaining provinces were net losers (these data were not asked in the 1976 Census). Newfoundland showed only 3.3% of the 1971 population as having been born in another province and Ontario 4.6%, while British Columbia showed the highest number (37.4%). These percentages reflect low rates of Canadian-born migrants to the former two provinces and a high rate to the latter. On the other hand, Saskatchewan-born persons were the most likely to be found living in a province other than that of their birth (40.0%), showing a high rate of migration, while Quebec-born (6.1%) and Ontario-born (7.4%) persons were the least likely reflecting low rates.

Migration by residence five years ago. Perhaps the most useful estimates on internal migration result from questions in national censuses which seek to determine the exact place of residence of each person on the preceding census date five years earlier. From a comparison with the location of their present residence, it is possible to estimate the size, directional flows and characteristics of the migrating population. Such questions were included in the 1961, 1971 and 1976 censuses of Canada. Migration trends as revealed by the 1961 and 1971 censuses were issued in monographs (Statistics Canada Catalogues 99-548 and 99-557), profiles (Statistics Canada Catalogue 99-705) and other studies (Statistics Canada Catalogues 99-513, 99-154, 99-751 and 99-752). A few basic summary results of the 1976 Census, which included questions on place of residence five years earlier at June 1, 1971, are presented in Tables 4.61 and 4.62.

Table 4.61 shows that almost half (48.5%) of Canada's population age 5 and over in 1976 living in a different dwelling than five years earlier, 23.5% had moved within the same municipality and 25.1% had moved from one municipality to another. The last group consisted of 16.5% who moved within the same province, 4.3% from one province to another, 0.9% whose province of residence in 1971 was not stated and 3.4% from outside Canada.

Table 4.62 summarizes the effect of migration on provincial populations for 1971-76. Ontario was the most favoured province of destination for migrants from other provinces (22.3%) but it was also the largest single provincial source of interprovincial migrants (28.0%). This resulted in a net internal migration loss of 52,505 people. Net internal migration losses were also experienced by Newfoundland, Quebec, Manitoba and Saskatchewan. The Maritime provinces, traditional losers in net internal migration, recorded gains along with British Columbia, Alberta, Yukon and Northwest Territories.

The overall effect of immigration (including returning Canadians) on net migration for 1971-76 was a population gain for each province and territory except Newfoundland and Saskatchewan. Among provinces receiving the largest share of immigrants were Ontario (50.5%), British Columbia (15.9%) and Quebec (15.5%). However, the 1976

Census did not count emigrants and therefore the data do not take into account the effects of emigration.

Migration to urban or rural localities. Table 4.63 compares the type and urban or rural status of residence on June 1, 1971 and June 1, 1976 for migrants who moved from one municipality to another between these dates. Urban municipalities were the favourite destination of all migrants, as well as the major locality of origin. Of all migrants, 55.2% moved to a municipality within a census metropolitan area, including those moving from one municipality to another within the same CMA. Immigrants from outside Canada showed the greatest trend to locate in urban areas (90.5%) with 86.5% choosing a CMA. In contrast, internal migrants showed a growing interest in rural municipalities, as the percentage living in urban municipalities (excluding the non-respondents) decreased to 72.4% in 1976 from 78.2% in 1971, while those living in rural municipalities increased from 21.8% to 27.6%. By status of residence in 1971, 74.7% of internal migrants who lived in urban municipalities in 1976 had also lived in urban municipalities in 1971 while 19.6% were from rural municipalities and 5.8% from unidentified municipalities. For migrants residing in rural municipalities in 1976, 72.4% came from urban, 23.6% from rural and 4.1% from unknown areas of origin.

Citizenship

4.6.4

Citizenship statistics. In 1977, citizenship certificates were granted to 107,899 new Canadian citizens.

The Citizenship Act came into effect on February 15, 1977. It replaced the Canadian Citizenship Act, passed in 1947, which was the first independent naturalization law to be enacted in the Commonwealth and which created the concept of a Canadian citizen distinct from that of a British subject.

Administered by the secretary of state department through more than 30 citizenship courts and offices, the act defines who is a citizen, and covers the conditions for acquisition, retention, loss and resumption of citizenship. Various provisions of previous statutes that accorded different treatment to certain groups of people have been removed. Now all persons are treated equally regardless of age, marital status, sex or country of origin. Some of the requirements for an adult to become a Canadian citizen are: legal admission to Canada; three years residence in Canada; basic knowledge of Canada and of one of Canada's official languages; and compliance with the national security and criminal record provisions of the Citizenship Act. The department administers federal-provincial agreements in support of citizenship and language instruction for adult immigrants.

Sources

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- 4.3.4 Statistics Division, Finance and Management Branch, Department of Indian Affairs and Northern Development.
- 4.4 Demography Division, Content and Analysis Branch, Social Statistics Field, Statistics Canada.
- 4.5 Health Division, Institutional and Public Finance Statistics Branch, Social Statistics Field, Statistics Canada.
- 4.6 - 4.6.1 Canada Employment and Immigration Commission.
- 4.6.2 - 4.6.3 Demography Division, Content and Analysis Branch, Social Statistics Field, Statistics Canada.
- 4.6.4 Communications Branch, Department of the Secretary of State of Canada.

Tables

... not available
... not appropriate or not applicable
— nil or zero
-- too small to be expressed
e estimate
p preliminary
r revised
certain tables may not add due to rounding

All figures of the 1971 and 1976 censuses in Tables 4.11 to 4.13, 4.15 to 4.21, and 4.23 to 4.31, have been subjected to a confidentiality procedure to prevent the possibility of associating small figures with an identifiable individual. The particular technique used is known as "random rounding". Under this method, all last or "unit" digits in a table (including all totals) are randomly rounded (either up or down) to "0" or "5". This technique provides the strongest possible protection against direct, residual, or negative disclosures without adding any significant error to the census data. However, since totals are independently rounded they do not necessarily equal the sum of individual rounded figures in distributions. Also, minor differences can be expected for corresponding totals and cell values in various census tabulations.

4.1 Growth of the population of Canada, 1851-1976

Census year	Population No.	Increase during intercensal period		Average annual rate of population growth %
		No.	%	
1851	2,436,297			
1861	3,229,633	793,336	32.6	2.9
1871	3,689,257	459,624	14.2	1.3
1881	4,324,810	635,553	17.2	1.6
1891	4,833,239	508,429	11.8	1.1
1901	5,371,315	538,076	11.1	1.1
1911	7,206,643	1,835,328	34.2	3.0
1921	8,787,949	1,581,306	21.9	2.0
1931	10,376,786	1,588,837	18.1	1.7
1941	11,506,655	1,129,869	10.9	1.0
1951 ¹	14,009,429	2,502,774	21.8	1.7
1956	16,080,791	2,071,362	14.8	2.8
1961	18,238,247	2,157,456	13.4	2.5
1966	20,014,880	1,776,633	9.7	1.9
1971	21,568,311	1,553,431	7.8	1.5
1976	22,992,604	1,424,293	6.6	1.3

¹Newfoundland included for the first time. Excluding Newfoundland the increase would have been 2,141,358 or 18.6%.

4.2 Growth components of Canada's population, 1851-1976¹

Period	Total popula- tion growth '000	Births '000	Deaths '000	Natural increase '000	Ratio of natural increase to total growth %	Immi- gration '000	Emi- gration '000	Net mi- gration '000	Ratio of net mi- gration to total growth %	Population at the end of the census period '000
1851-1861	793	1,281	670	611	77.0	352	170	182	23.0	3,230
1861-1871	460	1,370	760	610	132.6	260	410	-150	-32.6	3,689
1871-1881	636	1,480	790	690	108.5	350	404	-54	-8.5	4,325
1881-1891	508	1,524	870	654	128.7	680	826	-146	-28.7	4,833
1891-1901	538	1,548	880	668	124.2	250	380	-130	-24.2	5,371
1901-1911	1,835	1,925	900	1,025	55.9	1,550	740	810	44.1	7,207
1911-1921	1,581	2,340	1,070	1,270	80.3	1,400	1,089	311	19.7	8,788
1921-1931	1,589	2,420	1,060	1,360	85.5	1,200	970	230	14.5	10,377
1931-1941	1,130	2,294	1,072	1,222	108.1	149	241	-92	-8.1	11,507
1941-1951 ²	2,503	3,212	1,220	1,992	92.3	548	382	166	7.7	14,009
1951-1956	2,071	2,106	633	1,473	71.1	783	185	598	28.9	16,081
1956-1961	2,157	2,362	687	1,675	77.7	760	482	278	22.3	18,238
1961-1966	1,777	2,249	731	1,518	85.4	539	280	259	14.6	20,015
1966-1971	1,553	1,856	766	1,090	70.2	890	427	463	29.8	21,568
1971-1976	1,424	1,756	822	934	65.6	841	351	490	34.4	22,993

¹Includes Newfoundland since 1951.

²Data on growth components shown for 1941-51 were obtained by including data for Newfoundland for 1949-50 and 1950-51 only.

4.3 Projected population of Canada up to 2026

Year	Population as at June 1 '000	Annual rate of population growth ¹ %	Distribution by age			
			0-14 %	15-44 %	45-64 %	65+ %
Projection 1 ²						
1976	22,992.6	...	25.7	46.5	19.1	8.7
1981	24,573.5	1.4	23.2	48.6	18.8	9.4
1986	26,331.1	1.4	23.1	48.5	18.4	10.0
1991	28,091.9	1.2	23.7	47.0	18.6	10.7
1996	29,642.5	1.0	23.4	45.4	20.2	11.0
2001	30,980.7	0.8	22.1	44.3	22.4	11.2
2006	32,258.0	0.8	20.9	42.9	25.0	11.2
2011	33,570.6	0.8	20.4	41.5	26.3	11.8
2016	34,871.4	0.7	20.6	40.8	25.5	13.1
2021	36,050.9	0.6	20.7	40.7	24.1	14.5
2026	37,048.0	0.5	20.5	40.6	22.9	16.0

4.3 Projected population of Canada up to 2026 (concluded)

Year	Population as at June 1 '000	Annual rate of population growth ¹ %	Distribution by age			
			0-14 %	15-44 %	45-64 %	65+ %
Projection 4*						
1976	22,992.6	...	25.7	46.5	19.1	8.7
1981	24,205.3	1.0	22.8	48.7	19.0	9.5
1986	25,440.3	1.0	22.0	49.0	18.8	10.2
1991	26,548.7	0.8	21.7	47.9	19.3	11.1
1996	27,411.9	0.6	20.7	46.3	21.2	11.8
2001	28,053.5	0.4	19.2	44.9	23.8	12.1
2006	28,565.2	0.3	18.0	42.8	26.9	12.3
2011	28,999.8	0.3	17.4	40.6	28.7	13.3
2016	29,323.0	0.2	17.2	39.5	28.3	15.0
2021	29,478.7	0.1	17.0	39.0	27.1	16.9
2026	24,438.3	-0.1	16.6	38.4	25.9	19.1

The above figures represent a new series of projections based on the 1976 Census and replacing those in the *Canada Year Book 1978-79* (see text in Section 4.1.3).

¹The growth rate is for the 12-month period ending May 31 of the year indicated.

*Projection 1 assumptions: total fertility rate will change from 1.9 children in 1976 to 2.1 by 1991 and then remain constant; net migration of 100,000 per year; and expectation of life at birth will increase gradually to 70.2 years for males and 78.3 years for females by 1986 and then remain constant.

*Projection 4 assumptions: total fertility rate will change from 1.9 children in 1976 to 2.1 children in 1991 and then remain constant; net migration of 50,000 per year; and mortality is same as Projection 1.

4.4 Population and percentage change of population, by province, 1951-76

Province or territory	Population and percentage change					
	Population					
	1951	1956	1961	1966	1971	1976
Newfoundland	361,416	415,074	457,853	493,396	522,104	557,725
Prince Edward Island	98,429	99,285	104,629	108,535	111,641	118,229
Nova Scotia	642,584	694,717	737,007	756,039	788,960	828,571
New Brunswick	515,697	554,616	597,936	616,788	634,557	677,250
Quebec	4,055,681	4,628,378	5,259,211	5,780,845	6,027,764	6,234,445
Ontario	4,597,542	5,404,933	6,236,092	6,960,870	7,703,106	8,264,465
Manitoba	776,541	850,040	921,686	963,066	988,247	1,021,506
Saskatchewan	831,728	880,665	925,181	955,344	926,242	921,323
Alberta	939,501	1,123,116	1,331,944	1,463,203	1,627,874	1,838,037
British Columbia	1,165,210	1,398,464	1,629,082	1,873,674	2,184,621	2,466,608
Yukon	9,096	12,190	14,628	14,382	18,388	21,836
Northwest Territories	16,004	19,313	22,998	28,738	34,807	42,609
Canada	14,009,429	16,080,791	18,238,247	20,014,880	21,568,311	22,992,604
	Percentage change					
	1951-56	1956-61	1961-66	1966-71	1971-76	
Newfoundland	14.8	10.3	7.8	5.8	6.8	
Prince Edward Island	0.9	5.4	3.7	2.9	5.9	
Nova Scotia	8.1	6.1	2.6	4.4	5.0	
New Brunswick	7.5	7.8	3.2	2.9	6.7	
Quebec	14.1	13.6	9.9	4.3	3.4	
Ontario	17.6	15.4	11.6	10.7	7.3	
Manitoba	9.5	8.4	4.5	2.6	3.4	
Saskatchewan	5.9	5.1	3.3	-3.0	-0.5	
Alberta	19.5	18.6	9.9	11.2	12.9	
British Columbia	20.0	16.5	15.0	16.6	12.9	
Yukon	34.0	20.0	-1.7	27.8	18.8	
Northwest Territories	20.7	19.1	25.0	21.1	22.4	
Canada	14.8	13.4	9.7	7.8	6.6	

4.5 Components of population change, by province, 1966-71 and 1971-76

Province or territory	Total population change		Natural increase		Net migration ¹	
	1966-71	1971-76	1966-71	1971-76	1966-71	1971-76
Newfoundland	28,708	35,621	49,096	44,615	-20,388	-8,994
Prince Edward Island	3,106	6,588	5,207	4,498	-2,101	2,090
Nova Scotia	32,921	39,611	37,418	32,338	-4,497	7,273
New Brunswick	17,769	42,693	35,233	33,225	-17,464	9,468
Quebec	246,919	206,681	288,727	222,900	-41,808	-16,219
Ontario	742,236	561,359	373,072	327,861	369,164	233,498
Manitoba	25,181	33,259	49,260	45,160	-24,079	-11,901
Saskatchewan	-29,102	-4,919	50,867	38,123	-79,969	-43,042
Alberta	164,671	210,163	105,293	95,729	59,378	114,434
British Columbia	310,947	281,987	88,494	82,774	222,453	199,213
Yukon and Northwest Territories	10,075	11,250	6,720	6,404	3,355	4,846
Canada	1,553,431	1,424,293	1,089,387	933,627	464,044	490,666

¹Calculated as a residual.

4.6 Population of Canada, by province, selected years, as at June 1, 1921-79 (thousands)

Year	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT	NWT	Canada
1921	—	88.6	523.8	387.9	2,360.5	2,933.7	610.1	757.5	588.5	524.6	4.1	8.1	8,787.8
1931	—	88.0	512.8	408.2	2,874.7	3,431.7	700.1	921.8	731.6	694.3	4.2	9.3	10,376.7
1941	—	95.0	578.0	457.4	3,331.9	3,787.7	729.7	896.0	796.2	817.8	5.0	12.0	11,506.7
1951	361.4	98.4	642.6	515.7	4,055.7	4,597.6	776.5	831.7	939.5	1,165.2	9.1	16.0	14,009.4
1956	415.1	99.3	694.7	554.6	4,628.4	5,404.9	850.0	880.7	1,123.1	1,398.5	12.2	19.3	16,080.8
1961	457.9	104.6	737.0	597.9	5,259.2	6,236.1	921.7	925.2	1,332.0	1,629.1	14.6	23.0	18,238.3
1966	493.4	108.5	756.0	616.8	5,780.8	6,960.9	963.1	955.4	1,463.2	1,873.7	14.4	28.7	20,014.9
1971	522.1	111.6	789.0	634.6	6,027.8	7,703.1	988.2	926.2	1,627.9	2,184.6	18.4	34.8	21,568.3
1972	530.0	112.6	794.6	640.1	6,053.6	7,809.9	991.2	914.0	1,657.2	2,241.4	19.5	37.3	21,801.5
1973	537.2	114.0	804.3	647.1	6,078.9	7,908.8	996.2	904.5	1,689.5	2,302.4	20.5	39.4	22,042.8
1974	541.5	115.2	811.5	653.6	6,122.7	8,054.1	1,007.5	899.7	1,722.4	2,375.7	20.5	39.6	22,364.0
1975	549.1	117.1	819.5	665.2	6,179.0	8,172.2	1,013.6	907.4	1,778.3	2,433.2	21.3	41.2	22,697.1
1976	557.7	118.2	828.6	677.3	6,234.5	8,264.5	1,021.5	921.3	1,838.0	2,466.6	21.8	42.6	22,992.6
1977	563.9	120.2	835.1	687.0	6,278.2	8,354.0	1,029.0	936.9	1,895.6	2,493.5	21.1	43.2	23,257.7
1978	569.0	122.0	841.0	694.9	6,283.0	8,445.0	1,032.8	947.5	1,952.1	2,530.1	21.7	43.6	23,482.6
1979P	574.0	122.8	846.9	701.0	6,298.8	8,499.8	1,030.5	957.1	2,008.9	2,566.9	21.6	43.2	23,671.5

4.7 Population of incorporated cities, towns and villages classified by size group, 1966, 1971 and 1976

Size group	1966			1971			1976		
	Incor- porated centres	Popu- lation	% of total popu- lation	Incor- porated centres	Popu- lation	% of total popu- lation	Incor- porated centres	Popu- lation	% of total popu- lation
Over 500,000	2	1,886,839	9.4	2	1,927,138	8.9	3	2,274,738	9.9
Between									
400,000 and 500,000	1	410,375	2.1	3	1,267,727	5.9	3	1,341,466	5.9
300,000 and 400,000	2	707,500	3.5	2	611,514	2.8	2	616,465	2.7
200,000 and 300,000	3	845,867	4.2	4	900,778	4.2	3	736,652	3.2
100,000 and 200,000	6	997,051	5.0	8	1,060,048	4.9	12	1,578,755	6.9
50,000 and 100,000	26	1,740,446	8.7	26	1,870,435	8.7	34	2,286,408	10.0
25,000 and 50,000	43	1,438,388	7.2	49	1,633,969	7.6	52	1,795,675	7.8
15,000 and 25,000	52	1,019,205	5.1	59	1,150,768	5.3	50	978,090	4.3
10,000 and 15,000	65	781,611	3.9	55	675,748	3.1	69	849,488	3.7
5,000 and 10,000	125	898,136	4.5	144	1,028,412	4.8	149	1,051,844	4.6
3,000 and 5,000	165	637,117	3.2	173	670,537	3.1	179	694,881	3.0
1,000 and 3,000	471	818,003	4.1	502	866,086	4.0	490	827,807	3.6
Under 1,000	1,057	445,246	2.2	1,093	451,810	2.1	1,033	419,078	1.8
Total	2,018	12,625,784	63.1	2,120	14,114,970	65.4	2,079	15,451,347	67.4

4.8 Population of incorporated cities and towns of 50,000 and over, 1966, 1971 and 1976

Incorporated city or town	Year of incor- poration	1966	1971	1976
Beaumont, Que.	1976	11,742*	14,681*	55,339
Brampton, Ont.	1974	36,264	41,211*	103,459
Brantford, Ont.	1877	59,854*	64,421	66,950*
Burlington, Ont.	1915	65,941*	87,023	104,314*
Calgary, Alta.	1893	330,575*	403,319*	469,917*
Cambridge, Ont.	1973	—	64,794*	72,383
Charlesbourg, Que.	1976	24,926*	33,443*	63,147
Chicoutimi, Que.	1976	32,526*	33,893	57,737
Dartmouth, NS	1961	58,745	64,770	65,341
Edmonton, Alta.	1904	376,925*	438,152*	461,361*
Gatineau, Que.	1975	17,727*	22,321*	73,479
Guelph, Ont.	1879	51,377*	60,087*	67,538
Halifax, NS	1841	86,792	122,035*	117,882
Hamilton, Ont.	1846	298,121*	309,173	312,003
Hull, Que.	1875	60,176*	63,580*	61,039
Jonquière, Que.	1976	29,663	28,430*	60,691
Kamloops, BC	1973	10,759	26,168*	58,311
Kelowna, BC	1973	17,006*	19,412*	51,955
Kingston, Ont.	1846	59,004	59,047*	56,032
Kitchener, Ont.	1912	93,255*	111,804*	131,870*
LaSalle, Que.	1958	48,322	72,912	76,713
Laval, Que.	1965	196,088	228,010	246,243
London, Ont.	1855	194,416	223,222*	240,392
Longueuil, Que.	1920	25,593	97,590*	122,429
Markham, Ont.	1971	7,769	36,684*	56,206
Mississauga, Ont.	1968	93,492*	156,070*	250,017*
Moncton, NB	1973	45,847	47,891	55,934
Montreal, Que.	1832	1,222,255*	1,214,352*	1,080,546
Montreal N., Que.	1959	67,806	89,139*	97,250
Niagara Falls, Ont.	1903	56,891*	67,163*	69,423
North Bay, Ont.	1925	23,635	49,187*	51,639
Oakville, Ont.	1857	52,793*	61,483*	68,950*
Oshawa, Ont.	1924	78,082	91,587	107,023*
Ottawa, Ont.	1854	290,741	302,341	304,462
Peterborough, Ont.	1905	56,177*	58,111*	59,683
Prince George, BC	1915	24,471*	33,101*	59,929

4.8 Population of incorporated cities and towns of 50,000 and over, 1966, 1971 and 1976 (concluded)

Incorporated city or town	Year of incorporation	1966	1971	1976
Quebec, Que.	1832	166,984	186,088*	177,082*
Regina, Sask.	1903	131,127*	139,469*	149,593*
Saint John, NB	1785	51,567	89,039*	85,956
St. Catharines, Ont.	1876	97,101	109,722*	123,351
Ste-Foy, Que.	1955	48,298*	68,385*	71,237
St. John's, Nfld.	1888	79,884*	88,102*	86,576*
St-Laurent, Que.	1955	59,479*	62,955*	64,404
St-Léonard, Que.	1963	25,328*	52,040*	78,452
Sarnia, Ont.	1914	54,552	57,644	55,576
Saskatoon, Sask.	1906	115,892*	126,449*	133,750
Sault Ste Marie, Ont.	1912	74,594*	80,332	81,048
Sherbrooke, Que.	1875	75,690	80,711	76,804*
Sudbury, Ont.	1930	84,888*	90,535	97,604*
Thunder Bay, Ont.	1970	104,539	108,411	111,476
Toronto, Ont.	1834	664,584	712,786*	633,318
Trois-Rivières, Que.	1857	57,540*	55,869	52,518
Vancouver, BC	1886	410,375	426,256	410,188
Verdun, Que.	1912	76,832	74,718	68,013
Victoria, BC	1862	57,453	61,761	62,551
Windsor, Ont.	1892	192,544*	203,300*	196,526
Winnipeg, Man. ¹	1972	257,005*	246,246	560,874*

*Indicates a boundary change since the preceding census. Population totals in these cases are based on a different area, the boundaries at that particular census year.

¹Includes St. James-Assiniboia, Man.

4.9 Population of census metropolitan areas, 1951-71 (based on 1971 boundaries) and 1976

Census metropolitan area	1951	1956	1961	1966	1971	1976 ¹
Calgary	142,315	201,022	279,062	330,575	403,319	469,917
Chicoutimi-Jonquière	91,161	110,317	127,616	132,954	133,703	128,643
Edmonton	193,622	275,182	359,821	425,370	495,702	554,228
Halifax	138,427	170,481	193,353	209,901	222,637	267,991
Hamilton	281,901	341,513	401,071	457,410	498,523	529,371
Kitchener	107,474	128,722	154,864	192,275	226,846	272,158
London	167,724	196,338	226,669	253,701	286,011	270,383
Montreal	1,539,308	1,830,232	2,215,627	2,570,982	2,743,208	2,802,485
Oshawa	...	...	...	...	120,318 ¹	135,196
Ottawa-Hull	311,587	367,756	457,038	528,774	602,510	693,288
Quebec	289,294	328,405	379,067	436,918	480,502	542,158
Regina	72,731	91,215	113,749	132,432	140,734	151,191
Saint John, NB	80,689	88,375	98,083	104,195	106,744	112,974
St. Catharines-Niagara	189,046	233,034	257,796	285,453	303,429	301,921
St. John's, Nfld.	80,869	92,565	106,666	117,533	131,814	143,390
Saskatoon	55,679	72,930	95,564	115,900	126,449	133,750
Sudbury	80,543	107,889	127,446	136,739	155,424	157,030
Thunder Bay	73,713	87,624	102,085	108,035	112,093	119,253
Toronto	1,261,861	1,571,952	1,919,409	2,289,900	2,628,043	2,803,101
Vancouver	186,172	694,425	826,798	933,091	1,082,352	1,166,348
Victoria	114,859	136,127	155,763	175,262	195,800	218,250
Windsor	182,619	208,456	217,215	238,323	258,643	247,582
Winnipeg	357,229	412,741	476,543	508,759	540,262	578,217

¹Based on 1976 census metropolitan area.

4.10 Land area and density of population, by province, 1956-76

Province or territory	Land area km ²	Population per km ²				
		1956	1961	1966	1971	1976
Newfoundland	370 485	1.12	1.24	1.33	1.41	1.51
Prince Edward Island	5 657	17.55	18.50	19.19	19.73	20.90
Nova Scotia	52 841	13.15	13.95	14.31	14.93	15.87
New Brunswick	72 092	7.70	8.29	8.56	8.80	9.39
Quebec	1 356 791	3.41	3.88	4.26	4.44	4.59
Ontario	891 194	6.07	7.00	7.81	8.64	9.27
Manitoba	484 495	1.55	1.68	1.76	1.80	1.86
Saskatchewan	570 269	1.54	1.62	1.68	1.63	1.62
Alberta	644 389	1.74	2.07	2.27	2.53	2.85
British Columbia	930 528	1.50	1.75	2.02	2.35	2.65
Canada (excl. the territories)	5 442 741	2.95	3.34	3.67	3.95	4.21
Yukon	531 844	0.02	0.03	0.03	0.03	0.04
Northwest Territories	3 246 389	0.01	0.01	0.01	0.01	0.01
Canada	9 220 974	1.75	1.98	2.17	2.34	2.49

4.11 Number and percentage of the population classified as urban, and rural by non-farm and farm, by province, 1976

Province or territory	Urban		Rural				Total population No.		
	No.	%	Non-farm		Farm			Total	
			No.	%	No.	%		No.	%
Newfoundland	328,270	58.9	228,365	40.9	1,095	0.2	229,460	41.1	557,725
Prince Edward Island	43,880	37.1	62,155	52.6	12,190	10.3	74,345	62.9	118,230
Nova Scotia	462,590	55.8	353,815	42.7	12,170	1.5	365,985	44.2	828,570
New Brunswick	354,420	52.3	311,150	46.0	11,685	1.7	322,835	47.7	677,250
Quebec	4,932,755	79.1	1,110,580	17.8	191,110	3.1	1,301,690	20.9	6,234,445
Ontario	6,708,520	81.2	1,276,890	15.4	279,055	3.4	1,555,945	18.8	8,264,465
Manitoba	714,480	69.9	205,570	20.2	101,455	9.9	307,025	30.1	1,021,510
Saskatchewan	511,330	55.5	217,425	23.6	192,570	20.9	409,995	44.5	921,325
Alberta	1,379,165	75.0	269,225	14.7	189,650	10.3	458,875	25.0	1,838,035
British Columbia	1,897,085	76.9	525,950	21.3	43,575	1.8	569,525	23.1	2,466,605
Yukon	13,310	61.0	8,525	39.0	—	—	8,525	39.0	21,835
Northwest Territories	21,165	49.7	21,435	50.3	10	—	21,445	50.3	42,610
Canada	17,366,970	75.5	4,591,070	20.0	1,034,560	4.5	5,625,630	24.5	22,992,605

4.12 Sex distribution of the population, by province, 1976 and sex ratios, 1966, 1971 and 1976

Province or territory	Population, 1976		Males to 100 females		
	Male	Female	1966	1971	1976
Newfoundland	283,385	274,340	104	104	103
Prince Edward Island	59,325	58,900	103	101	101
Nova Scotia	414,150	414,420	101	101	100
New Brunswick	339,335	337,915	101	101	100
Quebec	3,084,645	3,149,800	100	99	98
Ontario	4,096,865	4,167,600	100	99	98
Manitoba	508,010	513,495	101	100	99
Saskatchewan	464,770	456,550	105	103	102
Alberta	932,370	905,670	104	103	103
British Columbia	1,232,510	1,234,095	103	101	100
Yukon	11,705	10,135	119	117	115
Northwest Territories	22,450	20,160	118	111	111
Canada	11,449,525	11,543,080	101	100	99

4.13 Age distribution of the population, 1966, 1971 and 1976

Age group	Number			Percentage		
	1966	1971	1976	1966	1971	1976
0- 4 years	2,197,387	1,816,155	1,731,995	11.0	8.4	7.5
5- 9 "	2,300,857	2,254,005	1,887,805	11.5	10.4	8.2
10-14 "	2,093,513	2,310,740	2,276,375	10.5	10.7	9.9
15-19 "	1,837,725	2,114,345	2,345,255	9.2	9.8	10.3
20-24 "	1,461,298	1,889,400	2,133,805	7.3	8.8	9.3
25-29 "	1,241,794	1,584,125	1,993,060	6.2	7.3	8.7
30-34 "	1,241,697	1,305,425	1,627,485	6.2	6.1	7.1
35-39 "	1,286,144	1,263,870	1,328,790	6.4	5.9	5.8
40-44 "	1,257,028	1,262,530	1,268,220	6.3	5.9	5.5
45-49 "	1,089,915	1,239,040	1,252,845	5.4	5.7	5.4
50-54 "	988,264	1,052,540	1,220,180	4.9	4.9	5.3
55-59 "	816,300	954,725	1,019,035	4.1	4.4	4.4
60-64 "	663,410	777,020	905,400	3.3	3.6	3.9
65-69 "	531,709	619,960	720,815	2.7	2.9	3.1
70-74 "	427,207	457,380	533,725	2.1	2.1	2.3
75-79 "	300,365	325,510	362,705	1.5	1.5	1.6
80-84 "	177,319	204,170	220,560	0.9	0.9	1.0
85-89 "	76,790	100,010	112,380	0.4	0.5	0.5
90 years and over	26,158	37,380	52,160	0.1	0.2	0.2
Total	20,014,880	21,568,310	22,992,605	100.0	100.0	100.0

4.14 Estimated population by age group and sex, by province, as at June 1, 1977P (thousands)

Province or territory	Age group and sex					
	0-4 years		5-9 years		10-14 years	
	Male	Female	Male	Female	Male	Female
Newfoundland	29.1	27.3	31.8	30.2	34.0	32.7
Prince Edward Island	5.0	4.6	5.4	5.1	6.5	6.2
Nova Scotia	33.3	31.3	36.3	34.5	42.8	40.6
New Brunswick	29.8	28.7	31.6	29.5	36.7	34.8
Quebec	231.1	218.7	239.7	228.5	306.2	292.3
Ontario	311.5	296.3	337.8	320.6	398.4	379.2
Manitoba	42.4	39.8	43.3	41.4	48.0	46.6
Saskatchewan	38.5	37.4	39.5	37.7	47.1	45.2
Alberta	81.3	77.6	84.4	79.6	93.9	90.0
British Columbia	89.1	85.4	98.1	93.8	112.5	108.0
Yukon	1.0	1.0	1.1	1.0	1.1	1.1
Northwest Territories	2.7	2.7	3.0	2.7	2.7	2.6
Canada	894.7	850.6	951.9	904.7	1,130.1	1,079.1

4.14 Estimated population by age group and sex, by province, as at June 1, 1977P (thousands) (concluded)

Province or territory	Age group and sex					
	20-24 years		25-34 years		35-44 years	
	Male	Female	Male	Female	Male	Female
Newfoundland	27.0	26.6	43.2	42.1	27.2	25.3
Prince Edward Island	5.4	5.3	8.7	8.5	6.1	5.8
Nova Scotia	40.2	38.3	64.5	62.8	43.6	42.5
New Brunswick	33.5	32.8	53.4	51.1	34.3	33.6
Quebec	306.8	306.3	528.9	528.1	368.8	369.8
Ontario	380.5	386.5	670.9	672.8	494.4	484.4
Manitoba	48.1	48.1	79.2	77.2	53.6	52.2
Saskatchewan	44.7	43.0	62.9	59.6	46.1	45.2
Alberta	99.2	96.1	161.3	155.1	109.9	103.5
British Columbia	110.6	112.0	205.4	201.2	147.0	138.7
Yukon	1.1	1.2	2.5	2.2	1.6	1.1
Northwest Territories	2.3	2.2	4.3	3.7	2.4	2.1
Canada	1,099.3	1,098.5	1,885.3	1,864.5	1,335.2	1,304.4
	55-64 years		65-69 years		70+ years	
	Male	Female	Male	Female	Male	Female
Newfoundland	20.2	19.3	7.3	7.2	10.3	12.8
Prince Edward Island	5.1	5.3	2.2	2.2	4.0	5.2
Nova Scotia	36.3	38.9	14.3	15.2	22.4	30.8
New Brunswick	27.6	29.2	10.9	11.6	17.1	23.0
Quebec	243.6	271.8	87.0	104.8	123.9	182.6
Ontario	346.2	372.9	125.9	145.4	193.8	297.0
Manitoba	46.0	49.5	18.0	20.1	30.7	40.5
Saskatchewan	44.5	45.8	17.8	18.1	32.1	36.7
Alberta	69.0	71.7	24.7	25.8	43.2	50.4
British Columbia	110.5	122.5	42.4	46.9	71.4	91.4
Yukon	0.7	0.4	0.2	0.1	0.2	0.1
Northwest Territories	0.9	0.7	0.3	0.2	0.3	0.2
Canada	950.6	1,028.1	351.0	397.6	549.4	771.0

4.15 Marital status of the population 15 years and over, by age group and sex, 1976

Age group	Sex	Single ¹	Married	Widowed	Divorced	Total
15-24 years	M	1,893,215	364,765	900	2,860	2,261,745
	F	1,538,485	668,300	2,400	8,135	2,217,320
	T	3,431,700	1,033,065	3,300	10,995	4,479,060
25-34 years	M	377,610	1,415,415	1,925	28,260	1,823,210
	F	234,945	1,501,895	9,130	51,370	1,797,335
	T	612,555	2,917,310	11,050	79,630	3,620,545
35-44 years	M	113,900	1,165,525	5,065	30,425	1,314,915
	F	82,940	1,126,120	24,450	48,580	1,282,095
	T	196,845	2,291,645	29,510	79,005	2,597,005
45-54 years	M	101,895	1,079,460	16,035	28,800	1,226,190
	F	79,180	1,047,270	79,650	40,735	1,246,840
	T	181,075	2,126,730	95,685	69,535	2,473,030
55-64 years	M	76,200	801,400	32,400	18,055	928,050
	F	79,030	717,055	177,200	23,100	996,385
	T	155,230	1,518,455	209,600	41,155	1,924,440
65-69 years	M	30,640	278,595	24,010	5,275	338,520
	F	37,280	213,995	124,905	6,120	382,300
	T	67,920	492,590	148,915	11,395	720,815
70 years and over	M	53,115	369,075	109,330	5,360	536,885
	F	77,980	225,035	436,165	5,460	744,645
	T	131,100	594,110	545,500	10,820	1,281,525
Total	M	2,646,580	5,474,235	189,665	119,035	8,429,510
	F	2,129,840	5,499,670	853,900	183,505	8,666,915
	T	4,776,420	10,973,905	1,043,565	302,535	17,096,425

¹The total number of single persons of all ages (including those under 15) amounted to 10,672,600, comprising 5,666,590 males and 5,006,005 females.

4.16 Population by mother tongue, 1971 and 1976, and language most often spoken in the home, 1971

Language	Mother tongue				Language most often spoken in the home	
	1971		1976		1971 ¹	
	No.	%	No.	%	No.	%
English	12,973,810	60.2	14,122,765	61.4	14,446,235	67.0
French	5,793,650	26.9	5,887,205	25.6	5,546,025	25.7
Baltic ^a	43,385	0.2	34,190	0.1	29,345	0.1
Celtic	24,360	0.1	10,060	--	1,545	--
Chinese	94,855	0.4	132,560	0.6	77,890	0.4
Croatian, Serbian	74,190	0.3	77,570	0.3	29,310	0.1
Czech and Slovak	45,145	0.2	34,955	0.2	24,555	0.1
Finnish	36,725	0.2	28,470	0.1	18,280	0.1
German	561,085	2.6	476,715	2.1	213,350	1.0
Greek	104,455	0.5	91,530	0.4	86,830	0.4
Indo-Pakistani	32,555	0.2	58,420	0.3	23,110	0.1
Inuit (Eskimo)	15,295	0.1	15,900	0.1	15,080	0.1
Italian	538,360	2.5	484,045	2.1	425,235	2.0
Japanese	16,890	0.1	15,525	0.1	10,500	--
Magyar (Hungarian)	86,835	0.4	69,305	0.3	50,670	0.2
Native Indian	164,525	0.8	117,110	0.6	122,205	0.6
Netherlandic and Flemish	159,165	0.7	122,555	0.5	39,360	0.2
Polish	134,780	0.6	99,845	0.4	70,960	0.3
Portuguese	86,925	0.4	126,535	0.5	74,765	0.3
Romanian	11,300	0.1	8,755	--	4,455	--
Russian	31,745	0.1	23,480	0.1	12,590	0.1
Scandinavian	84,335	0.4	59,410	0.3	10,055	--
Semitic languages	28,550	0.1	37,100	0.2	15,260	0.1
Spanish	23,815	0.1	44,130	0.2	17,710	0.1
Ukrainian	309,855	1.4	282,060	1.2	144,760	0.7
Yiddish	49,890	0.2	23,440	0.1	26,330	0.1
Other	41,830	0.2	63,950	0.3	31,900	0.1
Not stated	...	...	445,020	1.9	...	...
Total	21,568,310	100.0	22,992,605	100.0	21,568,310	100.0

¹Data not available for 1976.

^aIncludes Lithuanian, Estonian and Lettish.

4.17 Numerical and percentage distribution of the population by mother tongue, by province, 1976¹

Province or territory		1976				Total
		English	French	Other	Not stated	
Nfld.	No.	545,340	2,760	3,965	5,665	557,725
	%	97.8	0.5	0.7	1.0	100.0
PEI	No.	109,745	6,545	935	1,005	118,230
	%	92.8	5.5	0.8	0.8	100.0
NS	No.	768,070	36,870	13,625	10,010	828,570
	%	92.7	4.5	1.6	1.2	100.0
NB	No.	435,975	223,780	6,925	10,565	677,250
	%	64.4	33.0	1.0	1.6	100.0
Que.	No.	800,680	4,989,245	334,055	110,470	6,234,445
	%	12.8	80.0	5.4	1.8	100.0
Ont.	No.	6,457,645	462,070	1,178,670	166,080	8,264,465
	%	78.1	5.6	14.3	2.0	100.0
Man.	No.	727,240	54,745	218,875	20,645	1,021,510
	%	71.2	5.4	21.4	2.0	100.0
Sask.	No.	715,685	26,710	163,935	14,995	921,325
	%	77.7	2.9	17.8	1.6	100.0
Alta.	No.	1,482,725	44,440	272,395	38,480	1,838,040
	%	80.7	2.4	14.8	2.1	100.0
BC	No.	2,037,645	38,430	325,610	64,930	2,466,610
	%	82.6	1.6	13.2	2.6	100.0
YT	No.	18,940	525	1,630	745	21,840
	%	86.7	2.4	7.5	3.4	100.0
NWT	No.	23,085	1,095	16,995	1,435	42,610
	%	54.2	2.6	39.9	3.4	100.0
Canada	No.	14,122,770	5,887,205	2,537,615	445,020	22,992,605
	%	61.4	25.6	11.0	1.9	100.0

¹Based on 100% data.

4.18 Numerical and percentage distribution of the population speaking one or both of the official languages, by province, 1961 and 1971

Year and province or territory	English only		French only		English and French		Neither English nor French	
	No.	%	No.	%	No.	%	No.	%
1961								
Newfoundland	450,945	98.5	522	0.1	5,299	1.2	1,087	0.2
Prince Edward Island	95,296	91.1	1,219	1.2	7,938	7.6	176	0.2
Nova Scotia	684,805	92.9	5,938	0.8	44,987	6.1	1,277	0.2
New Brunswick	370,922	62.0	112,054	18.7	113,495	19.0	1,465	0.2
Quebec	608,635	11.6	3,254,850	61.9	1,338,878	25.5	56,848	1.1
Ontario	5,548,766	89.0	95,236	1.5	493,270	7.9	98,820	1.6
Manitoba	825,955	89.6	7,954	0.9	68,368	7.4	19,409	2.1
Saskatchewan	865,821	93.6	3,853	0.4	42,074	4.5	13,433	1.5
Alberta	1,253,824	94.1	5,534	0.4	56,920	4.3	15,666	1.2
British Columbia	1,552,560	95.3	2,559	0.2	57,504	3.5	16,459	1.0
Yukon	13,679	93.5	38	0.3	825	5.6	86	0.6
Northwest Territories	13,554	58.9	109	0.5	1,614	7.0	7,721	33.6
Canada	12,284,762	67.4	3,489,866	19.1	2,231,172	12.2	232,447	1.3
1971								
Newfoundland	511,620	98.0	510	0.1	9,350	1.8	625	0.1
Prince Edward Island	101,820	91.2	680	0.6	9,110	8.2	30	--
Nova Scotia	730,700	92.6	4,185	0.5	53,035	6.7	1,035	0.1
New Brunswick	396,855	62.5	100,985	15.9	136,115	21.5	600	0.1
Quebec	632,515	10.5	3,668,020	60.9	1,663,790	27.6	63,445	1.1
Ontario	6,724,100	87.3	92,840	1.2	716,065	9.3	170,090	2.2
Manitoba	881,715	89.2	5,020	0.5	80,935	8.2	20,585	2.1
Saskatchewan	867,315	93.6	1,825	0.2	45,985	5.0	11,110	1.2
Alberta	1,525,575	93.7	3,310	0.2	81,000	5.0	17,990	1.1
British Columbia	2,054,690	94.1	1,775	0.1	101,435	4.6	26,725	1.2
Yukon	17,130	93.2	5	--	1,210	6.6	35	0.2
Northwest Territories	25,500	73.3	100	0.3	2,120	6.1	7,085	20.4
Canada	14,469,540	67.1	3,879,255	18.0	2,900,155	13.4	319,360	1.5

4.19 Population by ethnic group, 1951, 1961 and 1971

Ethnic group	1951		1961		1971	
	No.	%	No.	%	No.	%
British Isles	6,709,685	47.9	7,996,669	43.8	9,624,115	44.6
English	3,630,344	25.9	4,195,175	23.0		
Irish	1,439,635	10.3	1,753,351	9.6		
Scottish	1,547,470	11.0	1,902,302	10.4		
Welsh and other	92,236	0.7	145,841	0.8		
French	4,319,167	30.8	5,540,346	30.4	6,180,120	28.7
Other European	2,553,722	18.2	4,116,849	22.6	4,959,680	23.0
Austrian	32,231	0.2	106,535	0.6	42,120	0.2
Belgian	35,148	0.2	61,382	0.3	51,135	0.2
Czech and Slovak	63,959	0.5	73,061	0.4	81,870	0.4
Danish	42,671	0.3	85,473	0.5	75,725	0.4
Finnish	43,745	0.3	59,436	0.3	59,215	0.3
German	619,995	4.4	1,049,599	5.8	1,317,200	6.1
Greek	13,966	0.1	56,475	0.3	124,475	0.6
Hungarian	60,460	0.4	126,220	0.7	131,890	0.6
Icelandic	23,307	0.2	30,623	0.2	27,905	0.1
Italian	152,245	1.1	450,351	2.5	730,820	3.4
Jewish	181,670	1.3	173,344	1.0	296,945	1.4
Lithuanian	16,224	0.1	27,629	0.2	24,535	0.1
Netherlands	264,267	1.9	429,679	2.4	425,945	2.0
Norwegian	119,266	0.8	148,681	0.8	179,290	0.8
Polish	219,845	1.6	323,517	1.8	316,425	1.5
Portuguese	--	--	--	--	96,875	0.4
Romanian	23,601	0.2	43,805	0.2	27,375	0.1
Russian	91,279	0.7	119,168	0.7	64,475	0.3
Spanish	--	--	--	--	27,515	0.1
Swedish	97,780	0.7	121,757	0.6	101,870	0.5
Ukrainian	395,043	2.8	473,337	2.6	580,660	2.7
Yugoslavic	21,404	0.2	68,587	0.4	104,950	0.5
Other	35,616	0.2	88,190	0.5	70,460	0.3
Asiatic	72,827	0.5	121,753	0.7	285,540	1.3
Chinese	32,528	0.2	58,197	0.3	118,815	0.6
Japanese	21,663	0.2	29,157	0.2	37,260	0.2
Other	18,636	0.1	34,399	0.2	129,460	0.6
Other	354,028	2.5	462,630	2.5	518,850	2.4
Eskimo	9,733	0.1	11,835	0.1	17,550	0.1
Native Indian	155,874	1.1	208,286	1.1	295,215	1.4
Negro	18,020	0.1	32,127	0.2	34,445	0.2
West Indian	--	--	--	--	28,025	0.1
Other and not stated	170,401	1.2	210,382	1.2	143,620	0.7
Total	14,009,429	100.0	18,238,247	100.0	21,568,310	100.0

4.20 Principal religious denominations of the population, 1951, 1961 and 1971

Religious denomination	1951		1961		1971	
	No.	%	No.	%	No.	%
Adventist	21,398	0.2	25,999	0.1	28,590	0.1
Anglican Church of Canada	2,060,720	14.7	2,409,068	13.2	2,543,180	11.8
Baptist	519,585	3.7	593,553	3.3	667,245	3.1
Christian Reformed	-	-	62,257	0.3	83,390	0.4
Greek Orthodox	172,271	1.2	239,766	1.3	316,605	1.5
Jehovah's Witnesses	34,596	0.2	68,018	0.4	174,810	0.8
Jewish	204,836	1.5	254,368	1.4	276,025	1.3
Lutheran	444,923	3.2	662,744	3.6	715,740	3.3
Mennonite ¹	125,938	0.9	152,452	0.8	181,800	0.8
Mormon	32,888	0.2	50,016	0.3	66,635	0.3
Pentecostal	95,131	0.7	143,877	0.8	220,390	1.0
Presbyterian	781,747	5.6	818,558	4.5	872,335	4.0
Roman Catholic	6,069,496	43.3	8,342,826	45.7	9,974,895	46.2
Salvation Army	70,275	0.5	92,054	0.5	119,665	0.6
Ukrainian (Greek) Catholic ²	191,051	1.4	189,653	1.0	227,730	1.1
United Church of Canada	2,867,271	20.5	3,664,008	20.1	3,768,800	17.5
Other	317,303	2.2	469,030	2.6	1,330,480	6.2
Total	14,009,429	100.0	18,238,247	100.0	21,568,310	100.0

¹Includes "Hutterites".²Includes "Other Greek Catholic".

4.21 Country of birth of the population, 1951, 1961 and 1971

Country of birth	1951		1961		1971 ¹	
	No.	%	No.	%	No.	%
Canada ¹	11,949,518	85.3	15,393,984	84.4	18,272,780	84.7
United Kingdom	912,482	6.5	969,715	5.3	933,040	4.3
Other Commonwealth countries	20,567	0.1	47,887	0.3	170,100	0.8
United States	282,010	2.0	283,908	1.6	309,640	1.4
European countries	801,618	5.7	1,468,058	8.0	1,684,510	7.8
Germany	42,693	0.3	189,131	1.0	211,060	1.0
Italy	57,789	0.4	258,071	1.4	385,755	1.8
Netherlands	41,457	0.3	135,033	0.7	133,525	0.6
Poland	164,474	1.2	171,467	0.9	160,040	0.7
USSR	188,292	1.3	186,653	1.0	160,120	0.7
Other	306,913	2.2	527,703	2.9	634,010	2.9
Asiatic countries	37,145	0.3	57,761	0.3	119,425	0.6
Other	6,089	-	16,934	0.1	78,800	0.4
Total	14,009,429	100.0	18,238,247	100.0	21,568,310	100.0

¹For figures on province of birth, see Table 4.64.

4.22 Indian bands and registered population, by province and type of residence, Dec. 31, 1976 and 1977

Year and province or territory	Number of bands ¹	Registered band membership			
		On reserves	Off reserves	Crown land	Total
1976					
Prince Edward Island	2	287	168	12	467
Nova Scotia	12	3,899	1,427	38	5,364
New Brunswick	15	3,749	1,230	81	5,060
Quebec	39	20,153	5,446	5,480	31,079
Ontario	113	37,648	20,399	5,144	63,191
Manitoba	56	28,571	10,588	3,152	42,311
Saskatchewan	68	29,359	12,656	1,303	43,318
Alberta	41	24,891	7,307	2,079	34,277
British Columbia	193	33,253	19,393	1,130	53,776
Yukon	16	14	251	7,084	7,349
Northwest Territories	13	45	436	2,265	2,746
Canada, 1976	568	181,869	79,301	27,768	288,938
1977					
Prince Edward Island	2	299	184	1	484
Nova Scotia	12	3,957	1,506	23	5,486
New Brunswick	15	3,866	1,218	39	5,123
Quebec	39	20,622	5,516	5,518	31,656
Ontario	115	40,477	20,778	3,321	64,576
Manitoba	57	29,274	10,921	3,154	43,349
Saskatchewan	68	30,332	13,390	1,177	44,899
Alberta	41	25,435	7,709	2,162	35,306
British Columbia	195	33,979	19,754	1,020	54,753
Yukon	13	62	445	2,274	2,781
Northwest Territories	16	8	261	7,216	7,485
Canada, 1977	573	188,311	81,682	25,905	295,898

¹Bands whose members were known to reside in more than one province or territory were allocated to that province or territory in which the majority was known to reside.

4.23 Households and average persons per household, by province, 1966, 1971 and 1976

Province or territory	Households				Average persons per household		
	1966	1971	1976	% increase 1971-76	1966	1971	1976
Newfoundland	96,632	110,475	131,665	19.2	5.0	4.6	4.1
Prince Edward Island	25,360	27,895	32,930	18.0	4.2	3.9	3.5
Nova Scotia	185,245	208,425	243,100	16.6	4.0	3.7	3.3
New Brunswick	141,761	158,100	190,435	20.4	4.2	3.9	3.5
Quebec	1,389,115	1,605,750	1,894,110	18.0	4.0	3.7	3.2
Ontario	1,876,545	2,228,160	2,634,620	18.2	3.6	3.4	3.1
Manitoba	259,280	288,720	328,005	13.6	3.6	3.3	3.0
Saskatchewan	260,822	267,845	291,155	8.7	3.6	3.4	3.1
Alberta	393,707	464,945	575,280	23.7	3.6	3.4	3.1
British Columbia	543,075	668,305	828,285	23.9	3.3	3.2	2.9
Yukon	8,931	12,685	{ 6,495 }	30.2	4.3	4.0	{ 3.1 }
Northwest Territories			{ 10,020 }				{ 4.1 }
Canada	5,180,473	6,041,305	7,166,095	18.6	3.7	3.5	3.1

4.24 Households by type, 1966, 1971 and 1976

Type of household	Number			Percentage		
	1966	1971	1976	1966	1971	1976
Family households	4,376,409	4,933,450	5,633,945	84.5	81.7	78.6
One-family households	4,246,753	4,812,360	5,542,295	82.0	79.7	77.3
Family of household head	4,209,549	4,773,900	5,513,765	81.3	79.0	76.9
Without additional persons	3,754,530	4,283,960	5,025,815	72.5	70.9	70.1
With additional persons	455,019	487,935	487,950	8.8	8.1	6.8
Family other than that of household head	37,204	38,465	28,525	0.7	0.6	0.4
Multiple family households ¹	129,656	121,085	91,650	2.5	2.0	1.3
Including family of household head	128,325	120,000	91,185	2.5	2.0	1.3
With no family of household head	1,331	1,090	465	--	--	--
Non-family households	804,064	1,107,855	1,532,150	15.5	18.3	21.4
One person only	589,571	811,835	1,205,340	11.4	13.4	16.8
Two or more persons	214,493	296,020	326,810	4.1	4.9	4.6
Total households	5,180,473	6,041,300	7,166,095	100.0	100.0	100.0

¹Consists of two or more families in one dwelling.

4.25 Households by age and sex of head, 1966, 1971 and 1976

Age and sex of head	Number			Percentage		
	1966	1971	1976	1966	1971	1976
Under 25 years	269,065	414,470	584,270	5.2	6.9	8.2 ^r
Male	227,040	334,750	430,640	4.4	5.5	6.0
Female	42,025	79,720	153,630	0.8	1.3	2.1
25-34 years	1,014,676	1,265,290	1,678,965	19.6	20.9	23.4
Male	954,508	1,154,085	1,457,230	18.4	19.1	20.3
Female	60,168	111,205	221,735	1.2	1.8	3.1
35-44 years	1,190,133	1,252,500	1,339,420	23.0	20.7	18.7
Male	1,102,647	1,142,540	1,184,990	21.3	18.9	16.5
Female	87,486	109,960	154,430	1.7	1.8	2.2
45-54 years	1,052,705	1,173,055	1,305,650	20.3	19.4	18.2
Male	928,751	1,022,330	1,115,730	17.9	16.9	15.6
Female	123,954	150,725	189,925	2.4	2.5	2.7 ^r
55-64 years	803,338	955,995	1,079,005	15.5	15.8	15.1
Male	655,003	764,230	841,245	12.6	12.6	11.7
Female	148,335	191,765	237,755	2.9	3.2	3.3
65 years and over	850,556	979,995	1,178,775	16.4	16.2	16.4
Male	562,131	626,130	720,380	10.9 ^r	10.4	10.1 ^r
Female	288,425	353,870	458,390	5.6	5.9	6.4
Total household heads	5,180,473	6,041,300	7,166,095	100.0	100.0	100.0
Male	4,430,080	5,044,065	5,750,225	85.5	83.5	80.2
Female	750,393	997,240	1,415,875	14.5	16.5	19.8

4.26 Households by marital status of head, 1966, 1971 and 1976

Marital status of head	Number			Percentage			Percentage increase	
	1966	1971	1976	1966	1971	1976	1966-71	1966-76
Married ¹	4,196,595	4,745,795	5,419,745	81.0	78.6	75.6	13.1	14.2
Widowed	553,119	629,670	745,645	10.7	10.4	10.4	13.8	18.4
Divorced	40,263	112,665	222,625	0.8	1.9	3.1	179.8	97.6
Single, never married	390,496	553,170	778,085	7.5	9.2	10.9	41.7	40.7
Total households	5,180,473	6,041,300	7,166,095	100.0	100.0	100.0	16.6	18.6

¹Includes household heads who are married but separated.

4.27 Families and persons per family, by province, 1966, 1971 and 1976¹

Province or territory	Families			Average persons per family		
	1966	1971 [†]	1976	1966	1971	1976
Newfoundland	97,011	107,960	124,655	4.6	4.4	4.0
Prince Edward Island	22,728	24,170	27,560	4.2	4.0	3.7
Nova Scotia	166,237	179,595	200,480	4.0	3.8	3.5
New Brunswick	129,307	139,720	162,035	4.3	4.0	3.7
Quebec	1,229,301	1,353,655	1,540,400	4.2	3.9	3.5
Ontario	1,657,933	1,877,055	2,104,540	3.7	3.6	3.4
Manitoba	222,735	234,595	251,975	3.8	3.6	3.4
Saskatchewan	216,674	214,840	225,685	3.9	3.7	3.5
Alberta	331,158	380,220	448,765	3.9	3.7	3.5
British Columbia	445,297	530,830	628,445	3.6	3.5	3.3
Yukon	7,885	10,530	{ 4,930 }	4.5	4.3	{ 3.5 }
Northwest Territories			{ 8,425 }			{ 4.3 }
Canada	4,526,266	5,053,170	5,727,875	3.9	3.7	3.5

¹1966 figures include families in collective households and households outside Canada; 1971 and 1976 figures exclude families in collective households and households outside Canada.

4.28 Families by family structure, 1966, 1971 and 1976¹

Family structure	Number			Percentage		
	1966	1971	1976	1966	1971	1976
Husband-wife families	4,154,381	4,575,640	5,168,565	91.8	90.6	90.2
Lone parent families	371,885	477,525	559,335	8.2	9.4	9.8
Male parent	71,502	100,355	94,990	1.6	2.0	1.7
Female parent	300,383	377,165	464,345	6.6	7.5 [†]	8.1
Total families	4,526,266	5,053,170	5,727,895	100.0	100.0	100.0

[†]See footnote 1, Table 4.27.

4.29 Husband-wife and lone parent families by age of husband, wife and lone parent, for Canada, 1966, 1971 and 1976¹

Age	1966		1971		1976	
	No.	%	No.	%	No.	%
Husband-wife families	4,154,381		4,605,485		5,168,565	
Husbands	4,154,381	100.0	4,605,485	100.0	5,168,565	100.0
Under 25 years	214,742	5.2	294,450	6.4	338,625	6.6
25-34 years	945,374	22.8	1,092,435	23.7	1,335,830	25.8
35-44 years	1,069,471	25.7	1,075,205	23.3	1,109,470	21.5
45-54 years	874,492	21.0	941,910	20.5	1,025,585	19.8
55-64 years	593,864	14.3	686,270	14.9	760,230	14.7
65 years and over	456,438	11.0	515,215	11.2	598,820	11.6
Wives	4,154,381	100.0	4,605,485	100.0	5,168,560	100.0
Under 25 years	451,829	10.9 [†]	367,440	12.3	623,490	12.1
25-34 years	1,029,701	24.8	1,154,550	25.1	1,416,840	27.4
35-44 years	1,080,354	26.0	1,043,710	22.7	1,065,965	20.6
45-54 years	816,643	19.7	920,470	20.0	987,600	19.1
55-64 years	481,260	11.6	581,495	12.6	674,715	13.1
65 years and over	294,594	7.1	337,805	7.3	399,960	7.7
Lone parent families	371,885		478,745		559,335	
Male	71,502	100.0	100,680	100.0	94,990	100.0
Under 25 years	2,407	3.4	4,225	4.2	3,280	3.5
25-34 years	5,559	7.8	16,535	16.4	12,275	12.9
35-44 years	12,176	17.0	22,210	22.1	21,565	22.7
45-54 years	15,918	22.3	22,525	22.4 [†]	24,730	26.0
55-64 years	13,313	18.6	16,375	16.3	16,065	16.9
65 years and over	22,129	30.9	18,805	18.7	17,075	18.0
Female	300,383	100.0	378,065	100.0	464,345	100.0
Under 25 years	12,542	4.2	25,295	6.7	33,080	7.1
25-34 years	36,327	12.1	66,665	17.6	98,660	21.2
35-44 years	59,515	19.8	78,350	20.7	100,100	21.6
45-54 years	68,592	22.8	85,160	22.5 [†]	99,155	21.4
55-64 years	50,480	16.8	59,500	15.7	65,765	14.2
65 years and over	72,927	24.3	63,090	16.7	67,595	14.6

¹1966 and 1971 figures include families in collective households and households outside Canada. 1976 figures include families in private households within Canada.

4.30 Husband-wife and lone parent families by mother tongue of husband, wife and lone parent, 1976

Province or territory	Mother tongue										Total husbands ¹	Mother tongue of wife										Total wives ¹
	Mother tongue of husband						Mother tongue of wife															
	English		French		Other		English		French			Other										
	No.	%	No.	%	No.	%	No.	%	No.	%		No.	%									
Newfoundland	111,285	97.7			735	0.6	1,005	0.9	113,855	111,300	97.8		710	0.6	905	0.8	113,855					
Prince Edward Island	22,710	92.0	1,470	6.0	325	1.3		24,685	22,665	91.8		1,560	6.3	290	1.2	24,685						
Nova Scotia	163,565	91.4	9,480	5.3	4,015	2.2		179,010	163,925	91.6	9,475	5.3	3,515	2.0	179,010							
New Brunswick	94,290	64.6	47,485	32.6	1,965	1.3		145,875	93,730	64.3	48,155	33.0	1,760	1.2	145,880							
Quebec	174,560	12.6	1,090,545	78.9	92,170	6.7		1,381,505	172,080	12.5	1,099,535	79.6	84,675	6.1	1,381,505							
Ontario	1,391,155	73.1	108,325	5.7	364,935	19.2		1,902,090	1,407,615	74.0	113,395	6.0	342,700	18.0	1,902,090							
Manitoba	149,995	66.0	13,140	5.8	60,290	26.5		227,240	152,600	67.2	13,390	5.9	57,335	25.2	227,240							
Saskatchewan	147,695	71.5	7,055	3.4	49,485	24.0		206,585	151,675	73.4	7,165	3.5	45,250	21.9	206,580							
Alberta	304,645	74.7	11,690	2.9	83,870	20.6		407,570	311,620	76.5	11,630	2.9	76,755	18.8	407,570							
British Columbia	441,990	77.8	11,065	1.9	102,245	18.0		568,245	450,320	79.2	10,925	1.9	93,580	16.5	568,250							
Yukon	3,695	83.3	145	3.3	475	10.7		4,435	3,740	84.3	125	2.8	425	9.6	4,435							
Northwest Territories	4,095	54.9	275	3.7	2,880	38.6		7,465	4,050	54.2	250	3.3	2,920	39.1	7,470							
Canada	3,009,675	58.2	1,301,405	25.2	763,635	14.8		5,168,565	3,045,310	58.9	1,316,330	25.5	710,115	13.7	5,168,560							
Province or territory	Mother tongue of male lone parent										Total lone parents ¹	Mother tongue of female lone parent										Total lone parents ¹
	English						English						English									
	English		French		Other		English		French			Other		English		French		Other				
	No.	%	No.	%	No.	%	No.	%	No.	%		No.	%	No.	%	No.	%	No.	%			
Newfoundland	2,110	19.5	20	0.2	15	0.1		8,455	78.3		50	0.5	35	0.3	10,800							
Prince Edward Island	450	15.7	40	1.4	5	0.2		2,195	76.4		145	5.0	20	0.7	2,875							
Nova Scotia	3,560	16.6	185	0.9	95	0.4		16,370	76.2		815	3.8	315	1.5	21,470							
New Brunswick	1,950	12.1	980	6.1	45	0.3		8,790	54.4		4,150	25.7	120	0.8	16,160							
Quebec	3,385	2.1	21,105	13.3	1,445	0.9		18,125	11.4		108,215	68.1	5,350	3.4	158,900							
Ontario	25,565	12.6	2,270	1.1	5,560	2.8		134,675	66.5		11,420	5.6	20,580	10.2	202,450							
Manitoba	2,605	10.5	255	1.0	1,140	4.6		14,425	58.3		1,280	5.2	4,745	19.2	24,730							
Saskatchewan	2,355	12.3	130	0.7	1,020	5.3		11,140	58.3		565	3.0	3,710	19.4	19,100							
Alberta	4,825	11.7	205	0.5	1,485	3.6		27,280	66.2		980	2.4	5,945	14.4	41,200							
British Columbia	8,110	13.5	255	0.4	1,830	8.0		41,265	68.6		975	1.6	6,950	11.6	60,200							
Yukon	100	20.0	—	—	20	4.0		310	62.0		5	1.0	50	10.0	500							
Northwest Territories	95	9.9 ^f	5	0.5	155	16.2		285	29.8		15	1.6	365	3.8	955							
Canada	55,115	9.9	25,460	4.6	12,820	2.3		283,310	50.7		128,615	23.0	48,200	8.6	559,330							

¹Includes persons whose mother tongue was not stated.

4.31 Children living at home in private households by age group and province, 1976¹

Province or territory	Under 6 years	6-14 years	15-17 years	18-24 years	25 years and over	Total children living at home
Newfoundland	66,660	113,565	36,035	37,620	10,315	264,195
Prince Edward Island	11,275	20,940	7,515	7,965	2,765	50,455
Nova Scotia	76,725	137,930	48,210	52,535	15,475	330,875
New Brunswick	67,960	118,405	41,340	46,260	12,825	286,795
Quebec	523,695	985,635	379,880	483,895	139,775	2,512,885
Ontario	724,820	1,303,370	459,640	517,485	112,680	3,118,000
Manitoba	94,980	158,545	55,460	56,255	15,130	380,365
Saskatchewan	85,675	151,800	54,385	46,500	13,180	351,540
Alberta	178,570	306,250	104,910	92,330	17,610	699,670
British Columbia	205,890	371,045	133,350	127,835	25,510	863,630
Yukon	2,390	3,655	1,105	770	135	8,055
Northwest Territories	6,255	9,210	2,285	1,915	615	20,280
Canada	2,044,890	3,680,345	1,324,110	1,471,380	366,020	8,886,745

¹Excludes children in collective households and households outside Canada.

4.32 Summary of principal vital statistics, by province, 1951-77

Province or territory and year	Live births		Deaths		Natural increase ¹		Marriages		Divorces	
	No.	Rate ^a	No.	Rate ^a	No.	Rate ^a	No.	Rate ^a	No.	Rate ^a
NEWFOUNDLAND										
Av. 1951-55	13,101	34.1	2,926	7.6	10,175	26.5	2,836	7.4	5	1.3
" 1956-60	14,934	34.6	3,114	7.2	11,820	27.4	3,032	7.0	5	1.2
" 1961-65	15,104	31.8	3,142	6.6	11,962	25.2	3,331	7.0	5	1.0
" 1966-70	13,057	25.8	3,122	6.2	9,935	19.6	4,147	8.2	56	11.1
" 1971-75	12,058	22.5	3,292	6.1	8,766	16.4	4,686	8.7	246	46.0
1976	11,130 ^e	20.0 ^e	3,323	6.0	7,807	14.0	4,171	7.5	424	76.0
1977	11,110	19.8	3,138	5.6	7,972	14.2	3,895	6.9	456	81.1

4.32 Summary of principal vital statistics, by province, 1951-77 (continued)

Province or territory and year	Live births		Deaths		Natural increase ¹		Marriages		Divorces	
	No.	Rate ²	No.	Rate ²	No.	Rate ²	No.	Rate ²	No.	Rate ²
PRINCE EDWARD ISLAND										
Av. 1951-55	2,720	27.2	923	9.2	1,797	18.0	623	6.2	10	9.8
" 1956-60	2,674	26.6	953	9.5	1,721	17.1	645	6.4	4	3.9
" 1961-65	2,767	25.7	1,006	9.3	1,761	16.4	672	6.2	8	7.8
" 1966-70	2,063	18.9	1,020	9.4	1,044	9.6	817	7.5	45	41.3
" 1971-75	1,973	17.3	1,045	9.2	928	8.1	983	8.6	70	61.5
1976	1,941	16.4	1,095	9.3	846	7.2	971	8.2	116	98.1
1977	1,969	16.4	1,046	8.7	923	7.7	892	7.4	136	113.4
NOVA SCOTIA										
Av. 1951-55	18,246	27.5	5,802	8.8	12,444	18.7	5,283	8.0	212	32.0
" 1956-60	19,097	26.9	6,062	8.5	13,035	18.4	5,289	7.4	227	32.0
" 1961-65	18,526	24.7	6,312	8.4	12,214	16.3	5,313	7.1	277	36.9
" 1966-70	14,217	18.7	6,622	8.7	7,594	10.0	6,335	8.3	573	75.4
" 1971-75	13,428	16.7	6,842	8.5	6,585	8.2	7,124	8.9	1,217	151.4
1976	12,821	15.5	6,955	8.4	5,866	7.1	6,690	8.1	1,753	211.6
1977	12,374	14.8	6,963	8.3	5,411	6.5	6,304	7.5	1,802	215.7
NEW BRUNSWICK										
Av. 1951-55	16,496	31.0	4,576	8.6	11,920	22.4	4,306	8.1	167	31.4
" 1956-60	16,567	29.0	4,640	8.1	11,927	20.9	4,357	7.6	194	34.0
" 1961-65	15,668	25.8	4,749	7.8	10,919	18.0	4,531	7.5	199	32.7
" 1966-70	11,984	19.3	4,873	7.8	7,112	11.4	5,481	8.8	267	42.9
" 1971-75	11,730	18.1	5,073	7.8	6,657	10.3	6,203	9.6	607	93.7
1976	11,811	17.4	5,202	7.7	6,609	9.8	5,754	8.5	938	138.5
1977	11,515	16.8	5,185	7.6	6,330	9.2	5,275	7.7	961	140.0
QUEBEC										
Av. 1951-55	128,523	30.0	34,269	8.0	94,254	22.0	35,584	8.3	327	7.6
" 1956-60	139,844	28.6	35,714	7.3	104,130	21.3	36,798	7.5	403	8.2
" 1961-65	131,453	24.0	37,698	6.9	93,755	17.1	38,126	7.0	380	6.9
" 1966-70	99,068	16.8	39,475	6.7	59,592	10.1	46,768	7.9	2,018	34.1
" 1971-75 ^e	87,966	14.4	42,425	7.0	45,541	7.5	51,475	8.4	9,217	151.3
1976 ^e	96,342	15.5	43,011	6.9	53,331	8.6	50,790	8.1	15,186	243.6
1977	95,690	15.2	43,459	6.9	52,231	8.3	48,171	7.7	14,501	230.8
ONTARIO										
Av. 1951-55	128,861	26.1	44,715	9.0	84,146	17.1	45,213	9.1	2,430	49.2
" 1956-60	152,688	26.4	49,431	8.5	103,257	17.9	46,482	8.0	2,801	48.4
" 1961-65	152,629	23.5	52,664	8.1	99,965	15.4	46,794	7.2	3,342	51.3
" 1966-70	130,166	17.8	55,415	7.6	74,751	10.2	62,216	8.5	7,452	102.1
" 1971-75	125,847	15.9	59,313	7.5	66,534	8.4	71,833	9.1	14,389	181.5
1976	122,700	14.8	60,645	7.3	62,055	7.5	69,364	8.4	18,589	224.9
1977	122,757	14.7	61,425	7.3	61,332	7.3	67,730	8.1	19,735	235.7
MANITOBA										
Av. 1951-55	21,321	26.4	6,775	8.4	14,546	18.0	7,104	8.8	356	44.1
" 1956-60	22,408	25.6	7,293	8.3	15,115	17.3	6,600	7.5	315	35.9
" 1961-65	22,137	23.4	7,637	8.1	14,500	15.3	6,674	7.1	376	39.7
" 1966-70	17,734	18.3	7,868	8.1	9,865	10.2	8,283	8.5	805	82.9
" 1971-75	17,370	17.4	8,252	8.3	9,118	9.1	9,130	9.1	1,640	164.1
1976	16,731	16.4	8,262	8.1	8,469	8.3	8,297	8.1	1,941	190.0
1977	16,716	16.2	8,178	7.9	8,538	8.2	8,238	8.0	2,085	202.2
SASKATCHEWAN										
Av. 1951-55	23,554	27.5	6,547	7.6	17,007	19.9	6,876	8.0	231	26.9
" 1956-60	24,046	26.9	6,753	7.5	17,293	19.4	6,395	7.1	247	27.6
" 1961-65	22,811	24.4	7,268	7.8	15,543	16.6	6,316	6.7	298	31.8
" 1966-70	17,852	18.7	7,466	7.8	10,386	10.9	7,460	7.8	566	59.3
" 1971-75	15,343	16.9	7,627	8.4	7,716	8.5	7,918	8.7	940	103.3
1976	15,969	17.3	7,809	8.5	8,160	8.9	7,563	8.2	1,207	131.0
1977	16,547	17.7	7,594	8.1	8,953	9.6	7,237	7.7	1,474	157.4
ALBERTA										
Av. 1951-55	31,087	30.6	7,527	7.4	23,560	23.2	9,750	9.6	612	60.4
" 1956-60	36,920	30.6	8,329	6.9	28,591	23.7	10,230	8.5	788	65.1
" 1961-65	37,004	26.5	9,317	6.7	27,687	19.8	10,581	7.6	1,226	87.5
" 1966-70	30,851	20.2	9,839	6.4	21,012	13.8	13,711	9.0	2,481	162.4
" 1971-75	30,110	17.8	10,927	6.5	19,183	11.3	16,490	9.7	4,457	262.9
1976	33,063	18.0	11,584	6.3	21,479	11.7	17,752	9.7	5,697	309.9
1977	34,406	18.1	11,609	6.1	22,797	12.0	17,976	9.5	5,843	307.6
BRITISH COLUMBIA										
Av. 1951-55	31,347	25.1	12,233	9.8	19,114	15.3	11,131	8.9	1,461	116.9
" 1956-60	38,930	25.7	13,980	9.2	24,950	16.5	11,955	7.9	1,514	100.0
" 1961-65	36,753	21.5	15,236	8.9	21,517	12.6	11,927	7.6	1,592	93.1
" 1966-70	34,266	17.1	16,737	8.3	17,529	8.7	17,186	8.6	3,272	163.1
" 1971-75	35,100	15.2	18,445	8.0	16,654	7.2	21,182	9.2	6,006	260.3
1976	35,848	14.5	18,788	7.6	17,060	6.9	21,536	8.7	8,231	333.7
1977	36,691	14.7	18,596	7.4	18,095	7.2	21,156	8.5	8,251	330.4

4.32 Summary of principal vital statistics, by province, 1951-77 (concluded)

Province or territory and year	Live births		Deaths		Natural increase ¹		Marriages		Divorces	
	No.	Rate ²	No.	Rate ²	No.	Rate ²	No.	Rate ²	No.	Rate ³
YUKON										
Av. 1951-55	413	43.0	90	9.4	323	33.6	94	9.8	..	..
" 1956-60	505	39.4	91	7.1	414	32.3	109	8.5	..	..
" 1961-65	509	34.9	87	6.0	422	28.9	107	7.3	17	118.0
" 1966-70	407	27.1	89	5.9	319	21.3	153	10.2	31	206.7
" 1971-75	456	22.7	109	5.4	347	17.3	189	9.4	47	233.3
1976	448	20.6	123	5.6	325	14.9	192	8.8	67	306.8
1977	433	20.1	105	4.9	328	15.3	204	9.5	59	274.4
NORTHWEST TERRITORIES										
Av. 1951-55	666	40.1	284	17.1	382	23.0	115	6.9	..	..
" 1956-60	943	46.7	310	15.3	633	31.4	155	7.7	1	..
" 1961-65	1,174	45.9	250	9.8	924	36.1	154	6.0	3	11.5
" 1966-70	1,244	41.5	229	7.6	1,015	33.8	212	7.1	13	43.3
" 1971-75	1,189	30.9	235	6.1	955	24.8	242	6.3	44	113.4
1976	1,183	27.8	212	5.0	971	22.8	263	6.2	58	136.1
1977	1,192	27.5	200	4.6	992	22.9	266	6.1	67	154.7
CANADA										
Av. 1951-55	416,334	28.0	126,666	8.5	289,668	19.5	128,915	8.7	5,811	39.1
" 1956-60	469,555	27.6	136,669	8.0	332,886	19.6	132,047	7.8	6,498	38.2
" 1961-65	456,534	24.1	145,368	7.7	311,166	16.4	134,524	7.1	7,723	40.7
" 1966-70	372,909	18.0	152,755	7.4	220,154	10.6	172,769	8.3	17,579	84.8
" 1971-75	352,570	16.0	163,585	7.4	188,984	8.6	197,455	8.9	38,880	176.0
1976 ^e	359,987	15.7	167,009	7.3	192,978	8.4	193,343	8.4	54,207	235.8
1977	361,400	15.5	167,498	7.2	193,902	8.3	187,344	8.0	55,370	237.7

¹Excess births over deaths.²Per 1,000 population.³Per 100,000 population.**4.33 Summary of principal vital statistics for cities, towns and other municipal subdivisions¹ of 50,000 population and over², 1976 and 1977 with averages for 1971-75**

Province and urban centre	Live births			Deaths			Marriages ³		
	Av. 1971-75	1976	1977	Av. 1971-75	1976	1977	Av. 1971-75	1976	1977
NEWFOUNDLAND									
*St. John's, c	1,686	1,552	1,513	656	673	666	1,045	887	912
PRINCE EDWARD ISLAND									
Charlottetown, c ⁴	279	227	191	251	263	244	251	246	219
NOVA SCOTIA									
Dartmouth, c	1,371	1,146	1,159	301	287	313	472	403	412
*Halifax, c	1,823	1,601	1,504	969	1,000	976	1,537	1,507	1,382
NEW BRUNSWICK									
*Saint John, c	1,558	1,494	1,376	832	822	829	878	846	772
QUEBEC									
*Hull, c	1,141	920	860	439	425	463	619	552	596
LaSalle, c	1,256	1,127	1,154	376	374	382	309	287	307
Laval, c	2,966	3,074	3,262	1,148	1,196	1,209	1,166	987	1,153
*Longueuil, c	1,992	2,322	2,266	540	620	627	671	588	637
*Montreal, c	13,772	13,350	13,267	10,493	10,263	10,349	11,590	9,931	10,941
*Montreal North, c	1,556	1,597	1,577	464	504	591	448	454	611
Quebec, c	2,524	2,115	1,999	1,731	1,734	1,672	1,881	1,772	1,884
*Ste-Foy, c	974	828	808	238	258	235	488	368	396
*St-Laurent, t	735	708	802	414	423	481	427	386	393
*St-Leonard, c	1,167	1,534	1,558	215	274	334	269	232	256
Sherbrooke, c	1,324	1,282	1,330	609	627	629	815	676	724
*Trois-Rivières, c	693	722	711	458	441	441	525	476	505
Verdun, c	775	712	769	748	724	748	581	458	489
ONTARIO									
*Brantford, c	1,025	1,012	1,081	599	601	636	693	624	620
*Burlington, t	1,456	1,395	1,378	408	499	511	548	571	659
*Etobicoke, b	3,552	3,401	3,466	1,838	1,869	2,063	1,594	1,663	1,642
*Guelph, c	1,044	1,006	1,028	436	451	482	567	580	557
*Hamilton, c	4,627	4,439	4,333	2,570	2,560	2,624	2,979	2,763	2,669
*Kingston, c	909	805	775	546	524	534	812	709	681
*Kitchener, c	2,224	2,180	2,352	771	817	834	1,145	1,003	1,031
*London, c	3,739	3,502	3,515	1,662	1,734	1,679	2,122	2,060	2,108
*Mississauga, t	3,728	4,521	4,584	699	956	995	1,122	1,260	1,384
*Niagara Falls, c	924	912	963	538	593	592	598	572	533
*Oakville, c	979	934	834	292	287	317	514	459	411
Oshawa, c	1,690	1,747	1,875	603	630	677	849	886	831
Ottawa, c	3,867	3,406	3,357	2,493	2,602	2,445	3,591	3,455	3,544

4.33 Summary of principal vital statistics for cities, towns and other municipal subdivisions¹ of 50,000 population and over ², 1976 and 1977 with averages for 1971-75 (concluded)

Province and urban centre	Live births			Deaths			Marriages ³		
	Av. 1971-75	1976	1977	Av. 1971-75	1976	1977	Av. 1971-75	1976	1977
ONTARIO (concluded)									
*Peterborough, c	824	822	787	551	567	583	655	626	576
*St. Catharines, c	1,753	1,698	1,758	880	1,014	1,017	1,088	987	1,020
*Sarnia, c	900	828	812	410	396	367	634	570	562
*Sault Ste Marie, c	1,337	1,358	1,260	517	474	558	805	740	714
*Scarborough, b	5,440	5,538	5,714	1,898	2,172	2,299	2,139	2,092	2,070
*Sudbury, c	1,786	1,574	1,485	613	623	650	1,080	995	993
*Thunder Bay, c	1,724	1,595	1,586	1,043	1,045	1,008	1,068	1,041	1,042
*Toronto, c	11,035	9,468	8,968	6,338	5,763	5,785	14,579	14,706	13,351
*Windsor, c	3,201	2,956	2,905	1,700	1,703	1,784	2,065	1,808	1,861
*York, b	2,706	2,396	2,236	1,010	952	1,028	537	394	424
*York, E., b	1,757	1,629	1,594	990	976	1,001	276	251	238
*York, N., b	8,416	7,796	7,637	2,788	2,922	3,054	2,135	1,915	1,941
MANITOBA									
*Winnipeg, c	7,939	8,468	8,366	4,135	4,527	4,459	5,024	5,007	4,914
SASKATCHEWAN									
*Regina, c	2,722	2,798	2,831	1,023	1,083	1,031	1,414	1,428	1,337
*Saskatoon, c	2,302	2,308	2,372	1,005	1,070	1,007	1,333	1,371	1,337
ALBERTA									
*Calgary, c	7,477	8,018	8,293	2,500	2,690	2,722	4,459	4,776	5,039
*Edmonton, c	7,807	8,049	8,111	2,646	2,732	2,819	5,048	5,324	5,245
BRITISH COLUMBIA									
*Burnaby, dm	1,676	1,534	1,479	931	1,028	971	830	770	686
*Coquitlam, dm	752	664	716	252	291	273	226	221	230
*North Vancouver, dm	813	761	678	271	316	284	349	383	336
*Richmond, twp	987	1,314	1,326	309	408	400	473	526	548
*Saanich, dm	751	707	798	512	518	509	389	392	399
*Surrey, dm	1,742	2,009	2,085	709	705	681	626	590	612
*Vancouver, c	4,908	4,627	4,656	4,892	4,579	4,418	4,947	4,189	4,056
*Victoria, c	727	565	664	1,078	1,005	925	1,182	1,185	1,069

¹Figures for certain subdivisions may not be comparable for the periods shown because of changes in area boundaries, particularly for those indicated by an asterisk: c=city, t=town, b=borough, dm=district municipality and twp=township.
²As at the date of the 1976 Census.
³By place of occurrence.
⁴Population fewer than 50,000 at date of 1976 Census but included as the largest urban centre in Prince Edward Island.

4.34 Number of live-born children in order of live births, by age of mother, 1976¹

Order of birth of child	Age of mother										% of total
	Under 15	15-19	20-24	25-29	30-34	35-39	40-44	45 and over	Age not stated	All ages	
1st child	342	29,470	60,162	42,957	10,322	1,969	295	12	449	145,978	41.8
2nd "	5	5,928	38,410	49,873	18,103	3,251	407	21	473	116,471	33.4
3rd "	—	583	9,493	20,635	12,692	3,011	388	19	185	47,006	13.5
4th "	—	48	1,806	5,424	5,169	2,018	382	14	70	14,931	4.3
5th "	—	3	343	1,475	1,928	1,128	300	14	20	5,211	1.5
6th "	—	—	93	509	789	683	226	21	6	2,327	0.7
7th "	—	—	10	227	396	402	153	15	7	1,210	0.3
8th "	—	—	6	95	231	250	131	12	6	731	0.2
9th "	—	—	—	30	137	158	93	6	2	426	0.1
10th and over	—	—	—	26	104	252	207	40	5	634	0.2
Not stated	6	1,370	4,601	4,679	1,745	447	82	10	992	13,932	4.0
Total	353	37,402	114,924	125,930	51,616	13,569	2,664	184	2,215	348,857	100.0
% of total	0.1	10.7	32.9	36.1	14.8	3.9	0.8	0.1	0.6	100.0	...

¹Excludes Newfoundland and Quebec.

4.35 Stillbirths and ratio per 1,000 live births, by province, 1961-76

Year	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT	NWT	Canada
Number (28 weeks or more gestation)													
Av. 1961-65	261	47	256	220	1,727	1,818	278	242	358	370	5	19	5,600
" 1966-70	171	28	181	158	1,074	1,402	195	174	278	311	4	20	3,996
" 1971-75	135	21	121	132	686	1,068	149	135	210	265	5	14	2,940
1971	158	23	139	138	807	1,221	164	159	254	310	6	17	3,396
1972	121	22	124	137	685	1,159	173	140	229	238	6	12	3,046
1973	151	15	119	132	658	1,034	151	144	206	243	3	10	2,866
1974	127	20	123	125	629	1,019	128	132	188	252	7	16	2,766
1975	116	25	98	130	650	906	128	100	173	284	2	15	2,627
1976	95	19	94	103	694	957	149	116	201	252	5	6	2,691

4.35 Stillbirths and ratio per 1,000 live births, by province, 1961-76 (concluded)

Year	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT	NWT	Canada
	<i>Ratio</i>												
Av. 1961-65	17.3	17.1	13.8	14.0	13.1	11.9	12.5	10.6	9.7	10.1	9.0	16.0	12.3
" 1966-70	13.0	13.5	12.7	13.1	10.8	10.7	10.9	9.7	9.0	9.0	9.8	16.0	10.7
" 1971-75	11.2	10.6	9.0	11.3	7.8	8.5	8.6	8.8	7.0	7.6	10.5	11.8	8.3
1971	12.4	10.9	9.8	11.3	9.0	9.4	0.1	9.9	8.3	8.9	11.9	13.2	9.4
1972	9.4	10.9	9.2	11.6	8.2	9.3	9.9	9.0	7.8	6.9	13.3	9.7	8.8
1973	12.7	8.0	9.0	11.6	7.8	8.4	8.9	9.7	7.0	7.1	7.1	8.3	8.3
1974	12.4	10.3	9.5	10.9	7.3	8.2	7.4	8.7	6.3	7.1	14.1	15.4	8.0
1975	10.3	13.3	7.5	11.0	7.0	7.2	7.5	6.6	5.5	7.8	4.9	12.8	7.3
1976	8.5	9.8	7.3	8.7	7.2	7.8	8.9	7.3	6.1	7.0	11.2	5.1	7.5

4.36 Age-specific fertility rate and gross reproduction rate per 1,000 women, 1961-76¹

Year and province or territory	Age group						Total fertility rate	Gross reproduction rate
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
Canada								
1961	58.2	233.6	219.2	144.9	81.1	28.5	2.4	3,840
1966	48.2	169.1	163.5	103.3	57.5	19.1	1.7	2,812
1971	40.1	134.4	142.0	77.3	33.6	9.4	0.6	2,187
1972	38.5	119.8	137.1	72.1	28.9	7.8	0.6	2,024
1973	37.2	117.7	131.6	67.1	25.7	6.4	0.4	2,931
1974	35.3	113.1	131.1	66.6	23.0	5.5	0.4	1,875
1975 ^r	35.3	112.7	131.2	64.4	21.6	4.8	0.4	1,852
1976	33.4	110.3	129.9	65.6	21.1	4.3	0.3	1,825
1976								0.887
Prince Edward Island	44.4	125.2	144.7	77.6	28.5	7.6	—	2,140
Nova Scotia	47.9	120.3	123.2	59.4	19.6	5.7	0.2	1,882
New Brunswick	52.8	141.2	133.0	60.2	22.7	5.5	0.6	2,070
Quebec	20.4	100.1	137.1	70.0	20.4	4.4	0.3	1,774
Ontario	33.4	105.6	124.6	64.6	20.6	4.3	0.3	1,767
Manitoba	46.8	118.4	138.0	71.5	23.1	4.8	0.3	2,015
Saskatchewan	56.8	151.2	152.3	68.3	25.4	5.5	0.6	2,301
Alberta	44.5	130.7	140.8	66.5	21.0	4.2	0.4	2,040
British Columbia	34.0	110.2	119.0	59.7	18.1	3.2	0.2	1,722
Yukon	60.6	142.1	112.9	64.1	13.0	9.7	2.3	2,024
Northwest Territories	109.7	188.5	159.4	99.3	51.6	20.7	5.7	3,175

¹Excludes Newfoundland, 1961-76. Quebec estimated for 1976.**4.37 Percentage change in death rate for each age group, by sex, 1951-76**

Age group	Male	Female	Age group	Male	Female
Under 1 year	-64.9	-65.0	50-54 years	-14.4	-33.8
1-4 years	-61.9	-66.7	55-59 "	-11.7	-34.3
5-9 "	-60.0	-57.1	60-64 "	-9.8	-35.4
10-14 "	-50.0	-60.0	65-69 "	-5.1	-34.1
15-19 "	—	-44.4	70-74 "	-5.7	-36.8
20-24 "	-5.3	-50.0	75-79 "	-11.8	-39.0
25-29 "	-16.7	-54.5	80-84 "	-12.8	-36.4
30-34 "	-28.6	-46.7	85 years and over	-16.8	-27.0
35-39 "	-20.0	-40.0			
40-44 "	-17.9	-43.3	All ages	-16.8	-21.8
45-49 "	-12.5	-33.3			

4.38 Numerical and percentage distribution of deaths by age group and sex, 1966, 1971 and 1976

Age group	Distribution									% change in death rate 1966-76
	1966			1971			1976			
	No.	%	Rate ¹	No.	%	Rate ¹	No.	%	Rate ¹	
Male										
Under 1 year	5,138	5.8	25.8	3,712	4.1	19.9	2,673	2.8	15.0 ^e	-41.9
1- 4 years	988	1.1	1.1	679	0.7	0.9	592	0.6	0.8	-27.3
5- 9 "	669	0.8	0.6	641	0.7	0.6	434	0.5	0.4	-33.3
10-14 "	620	0.7	0.6	589	0.6	0.5	498	0.5	0.4	-33.3
15-19 "	1,212	1.4	1.3	1,489	1.6	1.4	1,734	1.8	1.4	+7.7
20-24 "	1,324	1.5	1.8	1,697	1.9	1.8	1,877	2.0	1.8	—
25-29 "	980	1.1	1.6	1,176	1.3	1.5	1,458	1.5	1.5	-6.2
30-34 "	1,054	1.2	1.7	1,090	1.2	1.6	1,243	1.3	1.5	-11.8
35-39 "	1,456	1.7	2.2	1,416	1.5	2.2	1,329	1.4	2.0	-9.1
40-44 "	2,146	2.4	3.4	2,310	2.5	3.6	2,085	2.2	3.2	-5.9
45-49 "	3,111	3.5	5.7	3,523	3.8	5.7	3,512	3.6	5.6	-1.8
50-54 "	4,855	5.5	9.7	4,839	5.3	9.3	5,301	5.5	8.9	-8.2
55-59 "	6,352	7.2	15.4	6,887	7.5	14.6	7,046	7.3	14.3	-7.1
60-64 "	7,911	9.0	24.0	8,755	9.5	22.9	9,615	10.0	22.1	-7.9
65-69 "	9,226	10.5	36.2	10,279	11.2	34.7	11,261	11.7	33.3	-8.0
70-74 "	10,549	12.0	53.1	10,663	11.6	51.9	12,402	12.8	51.4	-3.2
75-79 "	11,102	12.6	79.9	11,058	12.1	79.0	11,633	12.0	77.3	-3.3
80-84 "	10,006	11.4	124.0	10,182	11.1	118.8	10,079	10.4	118.3	-4.6
85 years and over	9,214	10.5	213.4	10,838	11.8	198.5	11,713	12.1	195.5	-8.4
Total, all ages	87,913	100.0	8.7	91,823	100.0	8.5	96,725 ^a	100.0	8.4 ^e	-3.4
Female										
Under 1 year	3,822	6.2	20.2	2,644	4.0	15.1	2,008	2.9	11.9 ^e	-41.1
1- 4 years	775	1.3	0.9	551	0.8	0.8	417	0.6	0.6	-33.3
5- 9 "	480	0.8	0.4	424	0.7	0.4	292	0.4	0.3	-25.0
10-14 "	318	0.5	0.3	365	0.6	0.3	272	0.4	0.2	-33.3
15-19 "	467	0.8	0.5	579	0.9	0.6	590	0.8	0.5	—
20-24 "	403	0.7	0.5	559	0.9	0.6	551	0.8	0.5	—
25-29 "	384	0.6	0.6	485	0.7	0.6	516	0.7	0.5	-16.7
30-34 "	564	0.9	0.9	565	0.9	0.9	615	0.9	0.8	-11.1
35-39 "	845	1.4	1.3	815	1.2	1.3	773	1.1	1.2	-7.7
40-44 "	1,293	2.1	2.0	1,290	2.0	2.1	1,076	1.5	1.7	-15.0
45-49 "	1,823	2.9	3.3	1,901	2.9	3.0	1,841	2.6	3.0	-9.1
50-54 "	2,434	3.9	5.0	2,480	3.8	4.6	2,702	3.9	4.3	-14.0
55-59 "	3,115	5.0	7.7	3,477	5.3	7.2	3,507	5.0	6.7	-13.0
60-64 "	4,064	6.6	12.2	4,345	6.6	11.0	4,905	7.0	10.4	-14.8
65-69 "	5,393	8.7	19.5	5,614	8.6	17.3	6,287	9.0	16.4	-15.9
70-74 "	7,063	11.4	30.9	7,138	10.9	28.3	7,689	11.0	26.3	-14.9
75-79 "	8,695	14.0	53.9	8,930	13.6	48.1	9,490	13.5	44.7	-17.1
80-84 "	9,048	14.6	93.6	9,763	14.9	82.4	10,393	14.8	76.8	-17.9
85 years and over	10,964	17.7	183.4	13,524	20.7	163.3	16,197	23.1	154.7	-15.6
Total, all ages	61,950	100.0	6.2	65,449	100.0	6.1	70,284 ^a	100.0	6.1 ^e	-1.6
	1966			1971			1976			
	Male	Female		Male	Female		Male	Female		
Average age at death	62.0	65.9		63.3	68.2		64.3	70.1		
Median age at death ²	68.4	73.5		68.5	74.7		68.9	75.6		

¹Per 1,000 population per age group.²Includes 740 males and 163 females not stated.³The age above and below which half of the total number of annual deaths occurred.4.39 Five leading causes of death¹, by age group and sex, 1977

Cause	Total		Male		Female	
	No.	Rate ²	No.	Rate ²	No.	Rate ²
All ages						
Cardiovascular diseases	81,440	349.7	45,742	394.7	35,698	305.1
Cancer	36,050	154.8	20,189	174.2	15,861	135.5
Accidents	11,182	48.0	7,885	68.0	3,297	28.2
Pneumonia	4,876	20.9	2,614	22.6	2,262	19.3
Bronchitis, emphysema and asthma	2,840	12.2	2,697	18.1	743	6.3
Under 1 year ³						
Congenital anomalies	1,585	438.6	843	453.5	742	422.8
Anoxia and hypoxia	906	250.7	546	293.7	360	205.1
Immaturity	342	94.6	192	103.3	150	85.5
Pneumonia	163	45.1	97	52.2	66	37.6
Accidents	136	37.6	77	41.4	59	33.6
1-4 years						
Accidents	387	28.0	219	30.9	168	24.9
Congenital anomalies	127	9.2	68	9.6	59	8.7
Cancer	89	6.4	47	6.6	42	6.2
Pneumonia	32	2.3	14	2.0	18	2.7
Enteritis and other diarrhoeal diseases	11	0.8	6	0.8	5	0.7
5-19 years						
Accidents	2,253	35.0	1,674	50.8	579	18.4
Cancer	378	5.9	236	7.2	142	4.5
Suicide	331	5.1	269	8.2	62	2.0
Congenital anomalies	134	2.1	69	2.1	65	2.1
Cardiovascular diseases	112	1.7	60	1.8	52	1.7
20-44 years						
Accidents	3,881	45.2	3,136	72.6	745	17.5
Cancer	1,914	22.3	894	20.7	1,020	23.9
Cardiovascular diseases	1,827	21.3	1,307	30.3	520	12.2

4.39 Five leading causes of death¹, by age group and sex, 1977 (concluded)

Cause	Total		Male		Female	
	No.	Rate ²	No.	Rate ²	No.	Rate ²
Suicide	1,682	19.6	1,300	30.1	382	9.0
Cirrhosis of liver	341	4.0	247	5.7	94	2.2
45-64 years						
Cardiovascular diseases	16,361	367.3	12,192	558.8	4,169	183.4
Cancer	12,206	274.0	6,605	302.7	5,601	246.4
Accidents	2,091	46.9	1,495	68.5	596	26.2
Cirrhosis of liver	1,527	34.3	1,099	50.4	428	18.8
Suicide	962	21.6	642	29.4	320	14.1
65 years and over						
Cardiovascular diseases	63,101	3,049.7	32,160	3,571.7	30,941	2,647.7
Cancer	21,449	1,036.6	12,398	1,376.9	9,051	774.5
Pneumonia	3,948	190.8	2,052	227.9	1,896	162.2
Accidents	2,434	117.6	1,284	142.6	1,150	98.4
Bronchitis, emphysema and asthma	2,093	101.2	1,598	177.5	495	42.4

¹Leading causes of death for both sexes but not necessarily the leading causes for male or female.²Per 100,000 population.³Per 100,000 live births.**4.40 Infant deaths and stillbirths, by province and sex, 1961-76**

Province or territory and year	Infant deaths (<1 yr)			Neonatal deaths (<28 days)					<7 days	7-27 days	Post-neo-natal deaths (28 days to 1 yr)	Stillbirths (28+ weeks gestation)	Perinatal deaths (Stillbirths plus deaths <7 days) ¹
	Male	Female	Total	Male	Female	Total							
NEWFOUNDLAND													
Number													
1961	335	253	588	197	128	325	269	56	263	281	550		
1971	173	120	293	123	84	207	175	32	86	158	333		
1974	108	73	181	70	48	118	101	17	63	127	228		
1975	98	78	176	58	51	109	97	12	67	116	213		
1976	87	76	163	55	49	104	..	..	59	95	188		
Rate ¹													
1961	41.7	33.5	37.7	24.5	16.9	20.8	17.3	3.6	16.9	18.0	34.7		
1971	26.3	19.4	22.9	18.7	13.5	16.2	13.7	2.5	6.7	12.4	25.8		
1974	20.2	15.0	17.7	13.1	9.8	11.5	9.9	1.7	6.2	12.4	22.0		
1975	16.8	14.5	15.7	9.9	9.5	9.7	8.7	1.1	6.0	10.3	18.8		
1976	15.0	14.2	14.6	9.5	9.2	9.3	..	..	5.3	8.5	16.3		
PRINCE EDWARD ISLAND													
Number													
1961	55	38	93	29	25	54	47	7	39	46	93		
1971	29	17	46	24	13	37	34	3	9	23	57		
1974	21	13	34	18	12	30	29	1	4	20	49		
1975	15	22	37	12	14	26	23	3	11	25	48		
1976	19	9	28	11	8	19	..	..	9	19	37		
Rate ¹													
1961	37.4	27.8	32.8	19.7	18.3	19.0	16.6	2.5	13.8	16.2	32.2		
1971	26.1	17.1	21.9	21.6	13.1	17.6	16.2	1.4	4.3	10.9	26.8		
1974	20.5	14.2	17.5	17.6	13.1	15.5	15.0	0.5	2.1	10.3	24.9		
1975	15.0	23.7	19.2	12.0	15.1	13.5	11.9	1.6	5.7	13.0	24.6		
1976	18.7	9.7	14.4	10.8	8.6	9.8	..	..	4.6	9.8	18.9		
NOVA SCOTIA													
Number													
1961	309	229	538	187	140	327	280	47	211	300	580		
1971	160	105	265	108	72	180	148	32	85	139	287		
1974	98	87	185	59	56	115	94	21	70	123	217		
1975	131	82	213	73	51	124	99	25	89	98	197		
1976	100	77	177	64	51	115	..	..	62	94	184		
Rate ¹													
1961	31.0	24.3	27.8	18.8	14.9	16.9	14.4	2.4	10.9	15.5	29.5		
1971	21.8	15.2	18.6	14.7	10.4	12.6	10.4	2.2	6.0	9.8	19.9		
1974	14.7	13.9	14.3	8.8	8.9	8.9	7.3	1.6	5.4	9.5	16.6		
1975	19.1	13.1	16.2	10.6	8.2	9.5	7.6	1.9	6.8	7.5	14.9		
1976	15.1	12.4	13.8	9.7	8.2	9.0	..	..	4.8	7.3	14.2		

4.40 Infant deaths and stillbirths, by province and sex, 1961-76 (continued)

Province or territory and year	Infant deaths (<1 yr)			Neonatal deaths (<28 days)			<7 days	7-27 days	Post-neonatal deaths (28 days to 1 yr)	Stillbirths (28+ weeks gestation)	Perinatal deaths (Stillbirths plus deaths <7 days) ¹
	Male	Female	Total	Male	Female	Total					
NEW BRUNSWICK											
Number											
1961	248	186	434	145	105	250	217	33	184	222	439
1971	130	74	204	97	48	145	135	10	59	138	273
1974	93	80	173	65	57	122	114	8	51	125	239
1975	114	69	183	78	47	125	105	20	58	130	235
1976	92	64	156	51	46	97	..	..	59	103	195
Rate ¹											
1961	29.1	23.0	26.2	17.0	13.0	15.1	13.1	2.0	11.1	13.4	26.1
1971	20.7	12.5	16.7	15.5	8.1	11.9	11.1	0.8	4.8	11.3	22.2
1974	16.0	14.2	15.1	11.2	10.1	10.7	10.0	0.7	4.5	10.9	20.6
1975	19.1	11.9	15.5	13.0	8.1	10.6	8.9	1.7	4.9	11.0	19.7
1976	15.1	11.2	13.2	8.4	8.0	8.2	..	..	5.0	8.7	16.4
QUEBEC											
Number											
1961	2,464	1,855	4,319	1,666	1,189	2,855	2,489	366	1,464	1,929	4,418
1971	948	692	1,640	690	500	1,190	1,059	131	450	807	1,866
1974	733	558	1,291	531	393	924	811	113	367	629	1,440
1975	774	556	1,330	562	396	958	..	..	372	650	..
1976 ^e	718	583	1,301	504	431	935	..	..	366	694	..
Rate ¹											
1961	34.7	28.0	31.5	23.5	18.0	20.8	18.1	2.7	10.7	14.1	31.8
1971	20.6	16.0	18.4	15.0	11.6	13.3	11.9	1.5	5.0	9.0	20.7
1974	16.7	13.4	15.1	12.1	9.4	10.8	9.5	1.3	4.3	7.3	16.7
1975	16.1	12.3	14.3	11.7	8.8	10.3	..	..	4.0	7.0	..
1976 ^e	14.5	12.4	13.5	10.2	9.2	9.7	..	..	3.8	7.2	..
ONTARIO											
Number											
1961	2,090	1,536	3,626	1,507	1,120	2,627	2,378	249	999	1,870	4,248
1971	1,146	844	1,990	821	603	1,424	1,255	169	566	1,221	2,476
1974	915	751	1,666	621	542	1,163	1,020	143	503	1,019	2,039
1975	926	688	1,614	645	503	1,148	1,006	142	466	906	1,912
1976	858	657	1,515	589	451	1,040	..	..	475	957	1,883
Rate ¹											
1961	25.9	20.0	23.0	18.7	14.6	16.7	15.1	1.6	6.3	11.9	26.6
1971	17.1	13.3	15.3	12.2	9.5	10.9	9.6	1.3	4.3	9.4	18.8
1974	14.3	12.4	13.4	9.7	9.0	9.4	8.2	1.2	4.0	8.2	16.2
1975	14.4	11.2	12.8	10.0	8.2	9.1	8.0	1.1	3.7	7.2	15.1
1976	13.7	10.9	12.3	9.4	7.5	8.5	..	..	3.9	7.8	15.2
MANITOBA											
Number											
1961	341	247	588	211	169	380	336	44	208	301	637
1971	184	132	316	117	87	204	177	27	112	164	341
1974	152	120	272	97	79	176	146	30	96	128	274
1975	141	117	258	97	73	170	156	14	88	128	284
1976	156	105	261	105	71	176	..	..	85	149	298
Rate ¹											
1961	28.6	21.7	25.2	17.7	14.9	16.3	14.4	1.9	8.9	12.9	27.0
1971	20.0	15.0	17.5	12.7	9.9	11.3	9.8	1.5	6.2	9.1	18.7
1974	16.9	14.4	15.7	10.8	9.5	10.2	8.4	1.7	5.5	7.4	15.7
1975	16.2	13.9	15.0	11.1	8.7	9.9	9.1	0.8	5.1	7.5	16.4
1976	17.8	13.1	15.6	12.0	8.9	10.5	..	..	5.1	8.9	17.7
SASKATCHEWAN											
Number											
1961	373	245	618	244	151	395	334	61	223	266	600
1971	189	136	325	132	90	222	199	23	103	159	358
1974	181	132	313	112	79	191	172	19	122	132	304
1975	137	135	272	85	79	164	143	21	108	100	243
1976	136	93	229	75	64	139	..	..	90	116	234
Rate ¹											
1961	30.3	21.0	25.8	19.8	12.9	16.5	13.9	2.5	9.3	11.1	24.7
1971	23.2	17.2	20.2	16.2	11.4	13.8	12.4	1.4	6.4	9.9	22.1
1974	23.5	17.8	20.7	14.5	10.7	12.6	11.4	1.3	8.1	8.7	19.9
1975	17.7	17.9	17.8	11.0	10.5	10.7	9.4	1.4	7.1	6.6	15.8
1976	16.7	11.9	14.3	9.2	8.2	8.7	..	..	5.6	7.3	14.5
ALBERTA											
Number											
1961	612	432	1,044	418	289	707	629	78	337	372	1,001
1971	325	223	548	226	162	388	334	54	160	254	588
1974	264	185	449	157	121	278	234	44	171	188	422
1975	264	207	471	159	132	291	251	40	180	173	424
1976	288	183	471	188	120	308	..	..	163	201	460

4.40 Infant deaths and stillbirths, by province and sex, 1961-76 (concluded)

Province or territory and year	Infant deaths (<1 yr)			Neonatal deaths (<28 days)			<7 days	7-27 days	Post-neo-natal deaths (28 days to 1 yr)	Still-births (28+ weeks gestation)	Perinatal deaths (Stillbirths plus deaths <7 days) ¹
	Male	Female	Total	Male	Female	Total					
ALBERTA (concluded)											
Rate ¹											
1961	30.8	22.7	26.8	21.0	15.2	18.2	16.2	2.0	8.6	9.6	25.5
1971	20.5	15.2	17.9	14.3	11.0	12.7	10.9	1.8	5.2	8.3	19.1
1974	17.4	12.7	15.1	10.3	8.3	9.3	7.8	1.5	5.7	6.3	14.0
1975	16.3	13.4	14.9	9.8	8.5	9.2	7.9	1.3	5.7	5.5	13.3
1976	17.0	11.4	14.2	11.1	7.4	9.3	..	..	4.9	6.1	13.8
BRITISH COLUMBIA											
Number											
1961	534	411	945	331	264	595	515	80	350	412	927
1971	381	272	653	271	188	459	417	42	194	310	727
1974	349	223	572	226	138	364	325	39	208	252	577
1975	295	229	524	188	149	337	289	48	187	284	573
1976	292	203	495	201	131	332	..	..	163	252	553
Rate ¹											
1961	27.1	21.8	24.5	16.8	14.0	15.4	13.3	2.1	9.1	10.7	23.8
1971	21.2	16.1	18.7	15.1	11.2	13.2	12.0	1.2	5.6	8.9	20.7
1974	19.1	12.9	16.1	12.4	8.0	10.3	9.2	1.1	5.9	7.1	16.1
1975	16.0	12.9	14.4	10.2	8.4	9.3	8.0	1.3	5.2	7.8	15.7
1976	15.7	11.7	13.8	10.8	7.6	9.3	..	..	4.5	7.0	15.3
YUKON											
Number											
1961	13	10	23	6	4	10	7	3	13	4	11
1971	8	5	13	3	3	6	4	2	7	6	10
1974	7	5	12	3	2	5	4	1	7	7	11
1975	7	3	10	5	2	7	7	—	3	2	9
1976	6	4	10	3	3	6	..	..	4	5	10
Rate ¹											
1961	45.8	36.5	41.2	21.1	14.6	17.9	12.5	5.4	23.3	7.2	19.6
1971	29.0	21.7	25.7	10.9	13.0	11.9	7.9	4.0	13.8	11.9	19.5
1974	26.9	21.3	24.2	11.5	8.5	10.1	8.1	2.0	14.1	14.1	21.8
1975	34.5	14.6	24.5	24.6	9.8	17.2	17.2	—	7.4	4.9	22.0
1976	25.2	19.0	22.3	12.6	14.3	13.4	..	..	8.9	11.2	22.1
NORTHWEST TERRITORIES											
Number											
1961	73	51	124	25	14	39	22	17	85	16	38
1971	39	24	63	11	12	23	19	4	40	17	36
1974	25	19	44	14	6	20	19	1	24	16	35
1975	26	16	42	12	9	21	18	3	21	15	33
1976	16	25	41	7	12	19	..	..	22	6	22
Rate ¹											
1961	128.1	93.2	111.0	43.9	25.6	34.9	19.7	15.2	76.1	14.3	33.5
1971	58.8	38.4	49.0	16.6	19.2	17.9	14.8	3.1	31.1	13.2	27.6
1974	45.3	38.8	42.2	25.4	12.2	19.2	18.2	1.0	23.0	15.4	33.0
1975	45.8	26.5	35.9	21.1	14.9	17.9	15.4	2.6	17.9	12.8	27.8
1976	26.8	42.6	34.7	11.7	20.4	16.1	..	..	18.6	5.1	18.5
CANADA											
Number											
1961	7,447	5,493	12,940	4,966	3,598	8,564	7,523	1,041	4,376	6,019	13,542
1971	3,712	2,644	6,356	2,623	1,862	4,485	3,956	529	1,871	3,396	7,352
1974	2,946	2,246	5,192	1,973	1,533	3,506	3,069	437	1,686	2,766	5,835
1975	2,928	2,202	5,130	1,974	1,506	3,480	..	..	1,650	2,627	..
1976 ^e	2,768	2,079	4,847	1,853	1,437	3,290	..	..	1,557	2,691	..
Rate ¹											
1961	30.5	23.7	27.2	20.3	15.6	18.0	15.8	2.2	9.2	12.7	28.1
1971	19.9	15.1	17.5	14.1	10.6	12.4	10.9	1.5	5.2	9.4	20.1
1974	16.6	13.4	15.0	11.1	9.1	10.1	8.9	1.3	4.9	8.0	16.7
1975	15.9	12.6	14.3	10.7	8.6	9.7	..	..	4.6	7.3	..
1976 ^e	15.0	11.9	13.5	10.0	8.2	9.1	..	..	4.3	7.5	..

¹Perinatal rates per 1,000 live- and still-born infants; all other rates per 1,000 live births.

4.41 Canadian life table, 1971

Age	Male				Female			
	Number living at each age	Number dying between each age and the next	Prob-ability of dying before reaching next birthday	Expec-tation of life yr	Number living at each age	Number dying between each age and the next	Prob-ability of dying before reaching next birthday	Expec-tation of life yr
At birth	100,000	2,002	.02002	69.34	100,000	1,544	.01544	76.36
1 year	97,998	126	.00128	69.76	98,456	113	.00115	76.56
2 years	97,872	92	.00094	68.85	98,343	72	.00073	75.64
3 "	97,780	83	.00084	67.91	98,271	60	.00061	74.70
4 "	97,697	69	.00071	66.97	98,211	56	.00057	73.74
5 "	97,628	232	.00061	66.02	98,155	179	.00050	72.79
10 "	97,396	267	.00039	61.17	97,976	157	.00028	67.91
15 "	97,129	682	.00106	56.33	97,819	262	.00046	63.02
20 "	96,447	872	.00178	51.71	97,557	279	.00057	58.18
25 "	95,575	730	.00164	47.16	97,278	315	.00060	53.34
30 "	94,845	773	.00152	42.50	96,963	433	.00077	48.51
35 "	94,072	1,037	.00188	37.83	96,530	644	.00112	43.71
40 "	93,035	1,645	.00291	33.22	95,886	988	.00173	38.99
45 years	91,390	2,569	.00464	28.77	94,898	1,465	.00260	34.37
50 "	88,821	4,060	.00761	24.52	93,433	2,236	.00403	29.86
55 "	84,761	6,042	.01213	20.57	91,197	3,301	.00618	25.53
60 "	78,719	8,675	.01918	16.95	87,896	4,804	.00931	21.39
65 "	70,044	11,469	.02961	13.72	83,092	7,097	.01449	17.47
70 "	58,575	13,787	.04436	10.90	75,995	10,371	.02337	13.85
75 "	44,788	14,812	.06552	8.47	65,624	14,387	.03876	10.63
80 "	29,976	13,644	.09701	6.41	51,237	17,609	.06514	7.88
85 "	16,332	9,841	.14355	4.74	33,628	17,008	.10766	5.67
90 "	6,491	4,891	.20977	3.43	16,620	11,358	.17137	3.99
95 "	1,600	1,409	.30027	2.45	5,262	4,427	.26132	2.76
100 "	191		.41969	1.71	835		.38255	1.89

4.42 Expectation of life, 1961, 1966, 1971 and 1976 (years)

Age	1961		1966		1971		1976	
	Male	Female	Male	Female	Male	Female	Male	Female
At birth	68.35	74.17	68.75	75.18	69.34	76.36	70.19	77.48
1 year	69.50	74.98	69.53	75.71	69.76	76.56	70.24	77.41
2 years	68.63	74.11	68.64	74.81	68.85	75.64	69.31	76.49
3 "	67.71	73.18	67.71	73.88	67.91	74.70	68.37	75.53
4 "	66.78	72.23	66.77	72.93	66.97	73.74	67.42	74.57
5 "	65.83	71.27	65.82	71.97	66.02	72.79	66.46	73.60
10 "	61.02	66.41	61.00	67.12	61.17	67.91	61.57	68.71
15 "	56.20	61.51	56.16	62.22	56.33	63.02	56.70	63.80
20 "	51.51	56.65	51.50	57.37	51.71	58.18	52.09	58.95
25 "	46.91	51.80	46.94	52.52	47.16	53.34	47.55	54.10
30 "	42.24	46.98	42.29	47.68	42.50	48.51	42.90	49.25
35 "	37.56	42.18	37.62	42.88	37.83	43.71	38.21	44.43
40 "	32.96	37.45	33.01	38.15	33.22	38.99	33.59	39.67
45 "	28.49	32.82	28.55	33.51	28.77	34.37	29.11	35.02
50 "	24.25	28.33	24.31	29.02	24.52	29.86	24.86	30.51
55 "	20.30	24.01	20.38	24.70	20.57	25.53	20.88	26.14
60 "	16.73	19.90	16.81	20.58	16.95	21.39	17.23	21.96
65 "	13.53	16.07	13.63	16.71	13.72	17.47	13.95	18.00
70 "	10.67	12.58	10.83	13.14	10.90	13.85	11.05	14.33
75 "	8.21	9.48	8.37	9.94	8.47	10.63	8.55	11.03
80 "	6.14	6.90	6.36	7.26	6.41	7.88	6.44	8.15
85 "	4.46	4.89	4.79	5.16	4.74	5.67	4.73	5.81
90 "	3.16	3.39	3.60	3.60	3.43	3.99	3.39	4.03
95 "	2.20	2.32	2.71	2.48	2.45	2.76	2.39	2.74
100 "	1.49	1.56	2.04	1.69	1.71	1.89	1.68	1.84

4.43 Expectation of life at selected ages, by province, 1966, 1971 and 1976 (years)

Province and age	1966		1971		1976	
	Male	Female	Male	Female	Male	Female
Nfld.						
At birth	68.94	74.43	69.28	75.72	70.58	77.38
1 year	70.22	75.41	69.99	76.22	70.71	77.40
20 years	52.27	57.08	51.90	57.86	52.45	58.86
40 "	33.78	37.83	33.22	38.58	33.59	39.41
65 "	14.31	16.22	13.52	16.91	13.86	17.51
PEI						
At birth	68.32	75.51	69.30	77.35	69.19	78.21
1 year	69.43	76.22	70.10	77.64	69.50	78.51
20 years	51.56	57.88	52.04	59.36	51.78	60.32
40 "	33.49	38.77	33.83	39.96	33.60	41.15
65 "	14.43	17.57	14.40	18.41	14.41	19.31
NS						
At birth	68.34	74.80	68.66	75.97	69.45	77.81
1 year	69.16	75.43	69.05	76.13	69.55	77.75
20 years	51.32	57.16	51.02	57.77	51.35	59.25
40 "	32.99	37.96	32.80	38.50	32.90	39.89
65 "	13.80	16.75	13.58	17.14	13.47	18.54
NB						
At birth	68.53	75.26	69.07	76.41	69.73	77.74
1 year	69.30	75.97	69.49	76.61	69.88	77.66
20 years	51.58	57.79	51.59	58.36	51.88	59.28
40 "	33.35	38.53	33.23	39.15	33.67	39.96
65 "	14.01	17.04	13.78	17.56	14.54	18.38
Que.						
At birth	67.88	73.91	68.28	75.25	69.06	76.52
1 year	68.77	74.57	68.74	75.52	69.08	76.45
20 years	50.81	56.25	50.74	57.18	51.03	58.04
40 "	32.33	37.05	32.30	38.02	32.59	38.76
65 "	13.24	15.79	13.08	16.62	13.32	17.13
Ont.						
At birth	68.71	75.53	69.55	76.76	70.55	77.66
1 year	69.29	75.87	69.82	76.81	70.51	77.51
20 years	51.14	57.45	51.63	58.35	52.20	58.95
40 "	32.44	38.17	32.91	39.08	33.47	39.60
65 "	13.10	16.72	13.37	17.57	13.71	17.92
Man.						
At birth	69.80	76.11	70.16	76.93	70.65	77.87
1 year	70.54	76.57	70.60	77.21	70.91	77.96
20 years	52.48	58.25	52.67	58.88	52.85	59.54
40 "	34.11	39.10	34.18	39.66	34.49	40.38
65 "	14.18	17.42	14.32	18.02	14.59	18.64
Sask.						
At birth	70.45	76.45	71.05	77.59	71.13	78.64
1 year	71.49	77.06	71.76	77.98	71.34	78.81
20 years	53.50	58.80	53.82	59.62	53.47	60.51
40 "	35.22	39.61	35.59	40.51	35.24	41.43
65 "	15.00	17.59	15.44	18.54	15.03	19.40
Alta.						
At birth	70.10	76.24	70.42	77.30	71.07	77.92
1 year	70.82	76.72	70.90	77.52	71.16	77.84
20 years	52.70	58.30	52.94	59.17	53.07	59.42
40 "	34.36	39.09	34.60	40.06	34.72	40.25
65 "	14.46	17.34	14.64	18.24	14.74	18.35
BC						
At birth	69.21	75.84	69.85	76.69	70.95	78.40
1 year	69.94	76.33	70.26	76.85	71.09	78.34
20 years	51.91	58.01	52.29	58.53	53.02	59.91
40 "	33.70	38.93	34.10	39.49	34.79	40.78
65 "	14.20	17.41	14.50	18.00	14.90	19.21

4.44 Marriages and rate per 1,000 population, by province, 1961, 1971, 1976 and 1977

Province or territory	1961		1971		1976		1977	
	Total marriages	Rate per 1,000 population	Total marriages	Rate per 1,000 population	Total marriages	Rate per 1,000 population	Total marriages	Rate per 1,000 population
Newfoundland	3,306	7.2	4,685	9.0	4,171	7.5	3,895	6.9
Prince Edward Island	624	6.0	961	8.6	971	8.2	892	7.4
Nova Scotia	5,292	7.2	6,883	8.7	6,690	8.1	6,304	7.5
New Brunswick	4,504	7.5	6,149	9.7	5,754	8.5	5,275	7.7
Quebec	35,943	6.8	49,695	8.2	50,790 ^c	8.1	48,171	7.7
Ontario	44,434	7.1	69,590	9.0	69,364	8.4	67,730	8.1
Manitoba	6,512	7.1	9,127	9.2	8,297	8.1	8,238	8.0
Saskatchewan	6,149	6.6	7,813	8.4	7,563	8.2	7,237	7.7
Alberta	10,474	7.9	15,614	9.6	17,752	9.7	17,976	9.5
British Columbia	10,964	6.7	20,389	9.3	21,536	8.7	21,156	8.5
Yukon	128	8.8	166	9.0	192	8.8	204	9.5
Northwest Territories	145	6.3	252	7.2	263	6.2	266	6.1
Canada	128,475	7.0	191,324	8.9	193,343 ^e	8.4	187,344	8.0

4.45 Brides and bridegrooms, by age and marital status, 1976

Age group	Marital status							
	Brides							
	Number				Percentage			
	Spinsters	Widows	Divorced	Total	Spinsters	Widows	Divorced	Total
Under 15 years	—	—	—	—	—	—	—	—
15-19 "	44,827	20	86	44,933	28.5	0.3	0.4	24.0
20-24 "	81,345	175	2,558	84,078	51.7	2.4	11.5	45.0
25-29 "	21,774	391	6,162	28,327	13.9	5.5	27.6	15.2
30-34 "	5,216	394	4,785	10,395	3.3	5.5	21.5	5.6
35-39 "	1,768	425	2,958	5,151	1.1	6.0	13.3	2.8
40-44 "	833	529	2,121	3,483	0.5	7.4	9.5	1.9
45-49 "	521	795	1,589	2,905	0.3	11.2	7.1	1.5
50-54 "	383	932	1,125	2,440	0.2	13.1	5.0	1.3
55-59 "	265	1,041	563	1,869	0.2	14.6	2.5	1.0
60-64 "	176	947	235	1,358	0.1	13.3	1.1	0.7
65 years and over	121	1,463	114	1,698	0.1	20.5	0.5	0.9
Total, stated ages	157,229	7,112	22,296	186,637	99.9	99.8	100.0	99.9
Age not stated	183	14	10	207	0.1	0.2	--	0.1
Total, all ages	157,412	7,126	22,306	186,844	100.0	100.0	100.0	100.0
Average age	yr	22.7	52.7	34.8	25.3	...	...	...

Bridegrooms								
	Number				Percentage			
	Bachelors	Widowers	Divorced	Total	Bachelors	Widowers	Divorced	Total
Under 15 years	—	—	—	—	—	—	—	—
15-19 "	12,501	1	6	12,508	8.0	--	--	6.7
20-24 "	85,150	30	870	86,050	54.7	0.5	3.5	46.1
25-29 "	40,448	140	5,075	45,663	26.0	2.3	20.3	24.4
30-34 "	10,006	203	5,827	16,036	6.4	3.3	23.4	8.6
35-39 "	3,198	245	4,109	7,552	2.0	3.9	16.5	4.0
40-44 "	1,586	327	2,982	4,895	1.0	5.2	12.0	2.6
45-49 "	1,019	490	2,366	3,875	0.7	7.9	9.5	2.1
50-54 "	590	707	1,684	2,981	0.4	11.3	6.7	1.6
55-59 "	371	833	948	2,152	0.2	13.4	3.8	1.1
60-64 "	243	974	594	1,811	0.2	15.6	2.4	1.0
65 years and over	265	2,247	421	2,933	0.2	36.0	1.7	1.6
Total, stated ages	155,377	6,197	24,882	186,456	99.8	99.4	99.8	99.8
Age not stated	302	37	49	388	0.2	0.6	0.2	0.2
Total, all ages	155,679	6,234	24,931	186,844	100.0	100.0	100.0	100.0
Average age	yr	25.0	58.6	38.3	27.9	...	...	...

4.46 Marriages by religious denominations of brides and bridegrooms, 1976

Denomination of bridegroom	Denomination of bride										Total marriages	Percentage of grooms
	Angli-can	Bap-tist	Greek Orth-odox	Jewish	Lu-ther-an	Pres-by-terian	Roman Catho-lic	United Church	Other sects	Not stated		
Anglican	6,993	651	116	45	575	731	4,500	3,949	1,542	35	19,137	13.4
Baptist	648	2,211	18	7	119	150	924	897	564	6	5,544	3.9
Greek Orthodox	142	31	1,119	6	76	32	458	260	235	—	2,359	1.7
Jewish	66	9	2	1,083	16	13	125	54	114	1	1,483	1.0
Lutheran	574	145	48	9	1,297	167	1,141	1,055	565	10	5,011	3.5
Presbyterian	763	164	26	9	182	1,468	1,133	1,126	391	5	5,267	3.7
Roman Catholic	4,295	894	278	88	1,125	1,033	25,728	5,952	3,929	55	43,377	30.4
United Church	3,855	837	158	29	1,038	985	5,921	13,390	2,024	32	28,269	19.8
Other sects	2,009	675	179	94	673	469	4,936	2,696	19,697	31	31,459	22.1
Not stated	49	13	1	—	21	8	99	77	44	335	647	0.5
Total	19,394	5,630	1,945	1,370	5,122	5,056	44,965	29,456	29,105	510	142,553 ¹	100.0
Percentage of brides	13.6	3.9	1.4	1.0	3.6	3.5	31.5	20.7	20.4	0.4	100.0	51.4 ²

¹Excludes 44,291 marriages in the province of Quebec, due to non-availability of information.

²Percentage of marriages between persons of the same religious denomination.

4.47 Divorces¹ and rates, 1977 and 1978

Province or territory	Number		% change 1977-78	Rate per 100,000 population		% change 1977-78
	1977	1978		1977	1978	
Newfoundland	456	427	-6.4	81.1	75.0	-7.5
Prince Edward Island	136	135	-0.7	113.1	110.7	-2.1
Nova Scotia	1,802	1,960	8.8	215.7	233.1	8.1
New Brunswick	961	1,153	20.0	140.0	165.9	18.5
Quebec	14,501	14,865	2.5	230.8	236.6	2.5
Ontario	19,735	20,534	4.0	235.7	243.1	3.1
Manitoba	2,085	2,187	4.9	202.2	211.8	4.7
Saskatchewan	1,474	1,428	-3.1	157.4	150.7	-4.3
Alberta	5,843	6,059	3.7	307.6	310.4	0.9
British Columbia	8,251	8,265	0.2	330.4	326.7	-1.1
Yukon	59	65	10.2	274.4	299.5	9.1
Northwest Territories	67	77	14.9	154.7	176.6	14.2
Canada	55,370	57,155	3.2	237.7	243.4	2.4

¹Only those filed under the divorce laws of July 2, 1968.**4.48 Alleged grounds for divorce¹ by type of offence, 1971, 1975 and 1976**

Alleged grounds	1971		1975		1976	
	No.	%	No.	%	No.	%
Marital offence						
Adultery	11,261	28.5	20,356	30.0	22,182	30.4
Physical cruelty	5,102	12.9	9,387	13.9	10,605	14.5
Mental cruelty	5,677	14.4	11,204	16.5	12,916	17.7
Other	176	0.4	185	0.3	199	0.3
Total	22,216	56.2	41,132	60.7	45,902	62.9
Marriage breakdown by reason of:						
Addiction to alcohol	856	2.2	1,658	2.4	1,806	2.5
Separation for not less than 3 years	13,874	35.1	22,376	33.0	22,623	31.0
Desertion by petitioner for not less than 5 years	1,988	5.0	2,001	3.0	2,061	2.8
Other	588	1.5	602	0.9	621	0.8
Total	17,306	43.8	26,637	39.3	27,111	37.1
Total, alleged grounds ²	39,522	100.0	67,769	100.0	73,013	100.0

¹See footnote to Table 4.47.²Totals are higher than the number of divorces because some divorce decrees involve more than one alleged ground.**4.49 Divorces¹ by number of dependent children, 1971, 1975 and 1976**

Number of children	1971		1975		1976	
	No.	%	No.	%	No.	%
0	13,241	44.6	21,458	42.4	23,996	44.3
1	6,189	20.9	11,523	22.7	12,272	22.6
2	5,430	18.3	9,985	19.7	10,523	19.4
3	2,825	9.5	4,643	9.2	4,726	8.7
4	1,250	4.2	1,904	3.8	1,793	3.3
5 and more	737	2.5	1,098	2.2	897	1.7
Total, divorces	29,672	100.0	50,611	100.0	54,207	100.0
Average number of children	1.17	...	1.17	...	1.10	...

¹See footnote to Table 4.47.

4.50 Divorces¹ by duration of marriage, 1971, 1975 and 1976

Duration of marriage	1971		1975		1976	
	No.	%	No.	%	No.	%
Less than 1 year	75	0.3	127	0.2	153	0.3
1 year	472	1.6	872	1.7	1,026	1.9
2 years	931	3.1	1,662	3.3	1,863	3.4
3 "	1,258	4.2	2,285	4.5	2,585	4.8
4 "	1,638	5.5	3,063	6.1	3,411	6.3
Total, 1-4 years	4,299	14.4	7,882	15.6	8,885	16.4
5 years	1,687	5.7	3,277	6.5	3,525	6.5
6 "	1,586	5.3	3,216	6.4	3,558	6.5
7 "	1,468	4.9	3,096	6.1	3,259	6.0
8 "	1,471	5.0	2,839	5.6	2,919	5.4
9 "	1,270	4.3	2,435	4.8	2,741	5.1
Total, 5-9 years	7,482	25.2	14,863	29.4	16,002	29.5
10-14 years	5,631	18.9	8,987	17.7	9,844	18.2
15-19 "	4,290	14.5	6,757	13.4	6,872	12.7
20-24 "	3,438	11.6	4,996	9.9	5,203	9.6
25-29 "	2,307	7.8	3,583	7.1	3,633	6.7
30 years and over	2,123	7.2	3,356	6.6	3,548	6.5
Not stated	27	0.1	60	0.1	67	0.1
Total, divorces	29,672	100.0	50,611	100.0	54,207	100.0
Median duration of marriage	12.6	...	11.4	...	10.8	...

¹See footnote to Table 4.47.

4.51 Divorces¹ by marital status of husband and wife at time of marriage, 1971, 1975 and 1976

Marital status	1971		1975		1976	
	No.	%	No.	%	No.	%
Husband						
Single	27,525	92.8	47,149	93.2	50,309	92.8
Widowed	482	1.6	693	1.4	744	1.4
Divorced	1,662	5.6	2,762	5.4	3,143	5.8
Not stated	3	--	7	--	11	--
Total	29,672	100.0	50,611	100.0	54,207	100.0
Wife						
Single	27,236	91.8	46,843	92.5	49,874	92.0
Widowed	712	2.4	942	1.9	1,041	1.9
Divorced	1,723	5.8	2,823	5.6	3,289	6.1
Not stated	1	--	3	--	3	--

¹See footnote to Table 4.47.

4.52 Immigrant arrivals, 1952-78

Year	Arrivals	Year	Arrivals	Year	Arrivals
1952	164,498	1961	71,689	1970	147,713
1953	168,868	1962	74,586	1971	121,900
1954	154,227	1963	93,151	1972	122,006
1955	109,946	1964	112,606	1973	184,200
1956	164,857	1965	146,758	1974	218,465
1957	282,164	1966	194,743	1975	187,881
1958	124,851	1967	222,876	1976	149,429
1959	106,928	1968	183,974	1977	114,914
1960	104,111	1969	161,531	1978	86,313

4.53 Immigrant arrivals, by country of last permanent residence, 1977 and 1978

Country of last permanent residence	1977	1978	Country of last permanent residence	1977	1978
Europe	40,748	30,075	Indonesia	116	161
Austria	564	495	Iran	440	591
Belgium	436	359	Iraq	155	127
British Isles	17,997	11,801	Israel	957	735
England	13,648	8,983	Japan	412	359
Northern Ireland	1,391	775	Jordan	104	126
Scotland	2,284	1,693	Korea, South	1,243	714
Wales	659	336	Lebanon	3,847	1,454
Channel Islands	15	14	Malaysia	590	659
Czechoslovakia	118	136	Pakistan	1,575	1,159
Denmark	250	181	Philippines	6,232	4,370
Finland	177	260	Singapore	317	281
France	2,757	1,754	Sri Lanka	168	146
Germany, Federal Republic of	2,254	1,471	Syria	104	199
Greece	1,960	1,474	Taiwan	899	637
Hungary	287	197	Vietnam, South	243	3
Ireland	571	469	Other Asia ¹	840	1,471
Italy	3,411	2,976	North and Central America	26,129	19,223
Malta	161	213	Antigua	139	118
Netherlands	1,247	1,237	Bahamas	129	99
Norway	100	80	Barbados	634	455
Poland	902	753	Bermuda	111	97
Portugal	3,579	3,086	Grenada	197	184
Spain	356	289	Haiti	2,026	1,702
Sweden	260	226	Jamaica	6,291	3,858
Switzerland	944	801	Mexico	794	526
Turkey	311	192	St. Kitts, Nevis and Anguilla	112	107
USSR	299	379	St. Vincent	266	194
Yugoslavia	1,408	927	Trinidad and Tobago	1,552	1,190
Other Europe	399	319	United States	12,888	9,945
Africa	6,372	4,261	Other North and Central America	990	748
Angola	602	249	South America	7,840	6,782
Egypt, Republic of	598	471	Argentina	1,499	1,046
Ghana	145	150	Bolivia	32	26
Kenya	379	227	Brazil	308	273
Morocco	220	171	Chile	1,546	1,579
Mozambique	202	100	Colombia	541	404
Nigeria	146	145	Ecuador	548	422
South Africa, Republic of	2,458	1,653	French Guiana	6	1
Tanzania	605	361	Guyana	2,472	2,253
Uganda	34	43	Paraguay	128	114
Zambia	130	106	Peru	388	290
Other Africa	853	585	Suriname	11	3
Australasia	1,545	1,233	Uruguay	266	236
Australia	1,063	744	Venezuela	95	135
New Zealand	475	480	Oceania	912	719
Other Australasia	7	9	Fiji	710	552
Asia	31,368	24,007	Mauritius	173	147
Bangladesh	114	110	Other Oceania	29	20
China	798	644	Not stated	—	13
Cyprus	288	211			
Hong Kong	6,371	4,740			
India	5,555	5,110	Total, all countries	114,914	86,313

¹Includes 656 arrivals from the Socialist Republic of Vietnam.**4.54 Immigrant arrivals, by country of citizenship, 1977 and 1978**

Country of citizenship	1977	1978	Country of citizenship	1977	1978
Australia	875	601	New Zealand	453	437
Austria	180	194	Norway	84	81
Belgium	341	292	Pakistan	1,595	1,203
Britain and colonies	22,453	15,041	Philippines	6,052	4,326
Central America	440	333	Poland	956	752
China	965	822	Portugal	4,736	3,700
Czechoslovakia	136	86	South Africa	1,857	1,248
Denmark	248	197	South America	7,611	6,572
Egypt	620	468	Spain	332	269
Finland	185	271	Sri Lanka	210	176
France	2,450	1,545	Sweden	280	199
Germany, Federal Republic of	2,049	1,379	Switzerland	825	683
Greece	1,892	1,361	Trinidad and Tobago	1,586	1,205
Haiti	2,075	1,742	Turkey	320	219
Hungary	290	180	Union of Soviet Socialist Republics	279	236
India	5,993	5,471	United States	12,237	9,441
Ireland	763	626	Yugoslavia	1,660	1,042
Israel	1,000	801	Other African	1,864	1,323
Italy	3,102	2,644	Other Asian	5,589	4,290
Jamaica	6,161	3,864	Other European	498	526
Japan	387	348	Stateless	4,705	4,850
Lebanon	3,718	1,481	Other	4,151	1,840
Mexico	762	506			
Morocco	247	150			
Netherlands	1,362	1,292	Total	114,914	86,313

4.55 Intended province of destination of male and female immigrants, 1977 and 1978

Province or territory	1977			1978		
	Male	Female	Total	Male	Female	Total
Newfoundland	310	273	583	184	190	374
Prince Edward Island	85	107	192	72	73	145
Nova Scotia	784	803	1,587	448	532	980
New Brunswick	553	605	1,158	312	349	661
Quebec	9,720	9,528	19,248	7,008	7,282	14,290
Ontario	26,580	30,014	56,594	19,330	23,067	42,397
Manitoba	2,452	2,606	5,058	1,768	1,806	3,574
Saskatchewan	1,140	1,091	2,231	754	810	1,564
Alberta	6,281	6,413	12,694	4,631	5,195	9,826
British Columbia	6,862	8,533	15,395	5,480	6,851	12,331
Yukon and Northwest Territories	67	107	174	70	101	171
Canada	54,834	60,080	114,914	40,057	46,256	86,313

4.56 Sex distribution of immigrants, 1974-78

Year	Male	Female	Total
1974	111,122	107,343	218,465
1975	92,683	95,198	187,881
1976	72,605	76,824	149,429
1977	54,834	60,080	114,914
1978	40,057	46,256	86,313

4.57 Marital status of immigrant arrivals, by sex and age group, 1977 and 1978

Sex and age group	Single		Married		Widowed		Divorced		Separated		Total	
	1977	1978	1977	1978	1977	1978	1977	1978	1977	1978	1977	1978
Male												
0- 4 years	4,176	2,729	—	—	—	—	—	—	—	—	4,176	2,729
5- 9 "	5,298	3,345	—	—	—	—	—	—	—	—	5,298	3,345
10-14 "	4,416	3,133	—	—	—	—	—	—	—	—	4,416	3,133
15-19 "	4,295	3,464	80	54	—	—	—	—	—	—	4,375	3,518
20-24 "	4,788	3,505	2,765	2,082	—	1	7	4	7	7	7,567	5,599
25-29 "	3,196	2,242	5,864	4,422	4	4	80	66	40	25	9,184	6,759
30-34 "	1,071	828	4,965	3,452	4	5	155	112	52	34	6,247	4,431
35-39 "	344	255	3,210	2,157	8	5	96	94	31	24	3,689	2,535
40-44 "	116	110	1,843	1,282	8	8	66	43	24	11	2,057	1,454
45-49 "	73	46	1,182	762	19	19	56	31	19	17	1,349	875
50-54 "	31	35	873	703	39	32	38	21	12	12	993	803
55-59 "	23	25	729	667	62	74	20	17	8	7	842	790
60-64 "	20	21	1,815	1,559	120	142	21	14	17	11	1,993	1,747
65-69 "	16	15	1,197	1,005	151	111	16	10	14	7	1,394	1,148
70 years +	21	17	872	809	339	336	12	16	10	13	1,254	1,191
Total, male	27,884	19,770	25,395	18,954	754	737	567	428	234	168	54,834	40,057
Female												
0- 4 years	4,056	2,664	—	—	—	—	—	—	—	—	4,056	2,664
5- 9 "	4,960	3,391	—	—	—	—	—	—	—	—	4,960	3,391
10-14 "	4,273	2,876	5	10	—	—	—	—	—	—	4,278	2,886
15-19 "	3,792	3,216	1,277	1,038	—	—	—	—	—	—	5,069	4,254
20-24 "	3,608	2,792	6,583	5,203	8	3	34	22	13	11	10,246	8,031
25-29 "	2,011	1,446	7,036	5,406	18	9	124	93	27	25	9,216	6,979
30-34 "	656	515	4,693	3,323	21	14	138	101	33	35	5,541	3,988
35-39 "	222	217	2,616	1,924	36	27	97	90	23	34	2,994	2,292
40-44 "	106	107	1,527	1,177	76	58	81	64	18	17	1,808	1,423
45-49 "	88	65	1,145	903	253	164	53	69	24	26	1,563	1,227
50-54 "	61	62	1,198	1,072	491	424	62	48	28	29	1,840	1,635
55-59 "	40	65	1,366	1,236	741	620	56	43	17	34	2,220	1,998
60-64 "	119	114	1,279	1,074	914	778	70	57	95	74	2,477	2,097
65-69 "	88	89	727	575	887	789	46	43	45	35	1,793	1,531
70 years +	128	128	368	376	1,448	1,289	37	36	38	31	2,019	1,860
Total, female	24,208	17,747	29,820	23,317	4,893	4,175	798	666	361	351	60,080	46,256

4.58 Intended occupations of immigrants, 1976-78

Intended occupation	1976	1977	1978
WORKERS			
Managerial and administrative	5,655	4,259	2,697
Government administrators	66	57	32
Managerial (owners, managers, officials)	4,276	3,052	1,873
Other	1,313	1,150	792
Professional and technical			
Natural sciences, engineering and mathematics	5,648	4,168	2,963
Physical sciences			
Chemists	136	93	82
Geologists and related	81	98	79
Physicists	60	36	28
Other	258	198	140
Life sciences			
Agriculturists and related scientists	77	57	38
Biologists and related scientists	159	142	83
Other	-67	66	58
Architects and engineers			
Architects	180	104	71
Engineers			
Chemical	129	87	80
Civil	425	221	125
Electrical	338	287	181
Industrial	79	84	45
Mechanical	305	259	140
Metallurgical	14	17	12
Mining	30	38	31
Petroleum	26	21	14
Aerospace	35	60	34
Nuclear	16	15	5
Other	78	71	43
Architecture and engineering			
Surveyors	93	68	34
Draftsmen	1,030	516	370
Other	1,487	1,141	893
Mathematics, statistics, and systems analysis			
Mathematicians, statisticians and actuaries	48	41	29
Systems analysts	495	446	345
Other	2	2	3
Social sciences	887	686	507
Economists	188	138	92
Sociologists and anthropologists	43	24	8
Psychologists	101	76	57
Other	85	37	23
Social work			
Social workers	163	120	100
Other	91	75	57
Law and jurisprudence	112	89	71
Library, museum and archival sciences			
Librarians and archivists	79	71	49
Other	25	56	50
Religion	476	513	426
Teaching	2,400	1,778	1,289
University	614	503	402
Elementary and secondary	1,205	830	565
Other	581	445	322
Medicine and health	3,750	2,536	1,880
Health diagnosing and treating			
Physicians and surgeons	401	312	264
Dentists	102	97	69
Veterinarians	29	17	20
Osteopaths and chiropractors	6	3	—
Other	7	2	4
Nursing and therapy			
Supervisors of nurses	2	6	7
Graduate nurses (except supervisors)	1,130	607	405
Physiotherapists	275	267	177
Other	967	544	432
Other medicine and health			
Pharmacists	101	46	43
Optometrists	5	5	2
Other	725	630	457
Artistic, literary and performing arts	1,217	1,112	784
Advertising and illustrating artists	116	85	64
Fine and commercial art and photography	429	418	284
Performing and audiovisual arts	340	327	248
Writers and editors, publication	151	151	103
Writers and editors, radio, television, theatre and motion pictures	18	18	13
Other	163	113	72
Sport and recreation	134	102	81

4.58 Intended occupations of immigrants, 1976-78 (continued)

Intended occupation	1976	1977	1978
WORKERS (continued)			
Clerical and related	9,345	7,081	5,000
Stenographic and typing	3,571	2,959	2,136
Bookkeeping and accounting	1,906	1,295	939
Office machine and electronic data-processing equipment operators	399	382	272
Material recording, scheduling and distributing	326	205	168
Library, file and correspondence clerks	147	111	72
Reception, information, mail and message distribution	276	223	175
Other	2,720	1,906	1,238
Sales	2,632	2,232	1,563
Commodities	2,259	1,899	1,343
Services	314	262	174
Other	59	71	46
Services	5,640	4,631	3,634
Protective	336	257	143
Food and beverage preparation	2,317	1,747	1,437
Lodging and other accommodation	131	93	53
Personal	2,096	2,041	1,572
Apparel and furnishings	83	59	44
Other	677	434	385
Farming, horticultural and animal-husbandry	1,162	1,215	935
Farmers	66	187	270
Farm management	50	50	27
Other	1,046	978	638
Fishing, hunting and trapping	24	19	26
Forestry and logging	36	21	20
Mining and quarrying, including oil and gas field	103	81	38
Processing	1,171	938	720
Mineral ore treating	32	16	7
Metal processing	154	90	78
Clay, glass and stone processing	37	43	21
Chemicals, petroleum, rubber and plastic processing	93	84	68
Food and beverage processing	508	448	358
Wood processing (except paper pulp)	56	52	35
Pulp and paper making	11	4	13
Textile processing	259	177	133
Other	21	24	7
Machining and related	3,019	2,188	1,694
Metal machining	1,279	1,050	928
Metal shaping (except machining)	1,593	1,048	692
Wood machining	49	36	22
Clay, glass and stone machining	28	21	18
Other	70	33	34
Product fabricating, assembling and repairing	8,380	6,228	4,127
Metal products	186	142	96
Electrical and electronic equipment	1,059	932	643
Wood products	393	324	204
Textile, fur and leather products	2,763	1,803	1,257
Rubber, plastic and related products	107	75	39
Other, including mechanics and repairmen (n.e.c.)	3,872	2,952	1,888
Construction	4,008	3,103	2,129
Excavating, grading and paving	181	109	79
Electrical power linemen	45	24	21
Electricians and repairmen	498	341	206
Wire communications and electric power lighting equipment, installing and repairing	179	135	76
Carpenters	806	582	335
Brick and stone masons and tile setters	440	395	255
Concrete finishing	40	22	32
Plasterers	58	54	43
Painters and paperhangers	284	209	155
Roofing and waterproofing	25	27	14
Pipefitting and plumbing	264	230	161
Structural-metal erectors	32	13	4
Glaziers	23	14	10
Other	1,133	948	738
Transport equipment operating	784	503	368
Air	101	45	43
Railway	11	9	4
Water	145	80	72
Motor	525	364	248
Other	2	5	1
Material-handling and related (n.e.c.)	490	300	211

4.58 Intended occupations of immigrants, 1976-78 (concluded)

Intended occupation	1976	1977	1978
WORKERS (concluded)			
Other crafts and equipment operating	425	339	192
Printing and related	321	241	145
Stationary engine and utilities equipment operating	36	39	23
Electronic and related communications equipment operating	34	24	13
Other	34	35	11
Not stated and unknown	4,075	3,592	3,927
Total, workers	61,461	47,625	35,211
NON-WORKERS			
Spouses	25,330	19,571	15,826
Children	42,197	30,518	20,716
Other	20,441	17,200	14,560
Total, non-workers	87,968	67,289	51,102
Total, immigrants	149,429	114,911	86,313

4.59 Estimates of annual emigration from Canada, years ended May 31, 1962-78

June 1 to May 31	Total estimated emigration	June 1 to May 31	Total estimated emigration
1961-62	74,000	1971-72	66,100
1962-63	79,500	1972-73	62,300
1963-64	86,400	1973-74	84,000
1964-65	95,800	1974-75	79,400
1965-66	96,400	1975-76	65,400
Total, 1961-66	432,100	Total, 1971-76	357,200
1966-67	104,200	1976-77P	69,600
1967-68	111,500	1977-78P	70,200
1968-69	91,700		
1969-70	86,800		
1970-71	78,200		
Total, 1966-71	472,400		

4.60 Internal migration of Canadian-born population, by province of birth and by province of residence, 1971 (thousands)

Province or territory of birth	Province or territory of residence, 1971											Total (place of birth)
	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT and NWT	
Newfoundland	496	1	17	4	7	60	2	1	2	5	--	594
Prince Edward Island	--	95	7	5	3	20	1	1	3	3	--	139
Nova Scotia	4	4	661	26	21	116	5	3	12	21	--	874
New Brunswick	2	3	20	539	49	81	3	2	7	12	--	718
Quebec	3	1	10	16	5,303	252	9	6	18	31	1	5,650
Ontario	5	3	24	15	137	5,210	40	27	60	107	2	5,630
Manitoba	--	--	3	2	14	91	702	36	53	107	2	1,011
Saskatchewan	--	--	3	1	8	81	53	710	145	178	3	1,183
Alberta	--	--	3	2	7	43	13	20	1,003	162	6	1,260
British Columbia	--	--	3	1	7	39	8	9	41	1,056	5	1,170
Yukon and Northwest Territories	--	--	--	--	2	4	1	1	3	4	28	43
Total (place of residence)	513	108	752	611	5,559	5,996	837	815	1,346	1,688	48	18,273

4.61 Population 5 years and over, by mobility status for the period 1971-76, by province, 1976

Mobility status (based on residence as at June 1, 1971)	Province of residence as at June 1, 1976													
	Nfld.		PEI		NS		NB		Que.		Ont.			
	'000	%	'000	%	'000	%	'000	%	'000	%	'000	%		
Non-movers ¹	324	64.9	65	60.1	443	58.2	353	57.2	3,165	54.7	3,880	50.7		
Movers ²	175	35.1	43	39.9	318	41.8	264	42.8	2,624	45.3	3,769	49.3		
Non-migrants ³	90	18.1	16	15.2	152	20.0	128	20.8	1,367	23.6	1,840	24.1		
Migrants ⁴	85	17.0	27	24.7	166	21.8	136	22.0	1,257	21.7	1,929	25.2		
Within same province	58	11.6	13	11.7	91	12.0	70	11.4	1,019	17.6	1,299	17.0		
From different province	20	4.0	11	10.7	56	7.3	47	7.6	80	1.4	204	2.7		
Province of residence in 1971 not stated	3	0.6	2 ^r	0.8	6	0.8	5	0.9	49	0.9	62	0.8		
From outside Canada	4	0.8	2	1.6	13	1.6 ^r	13	2.1	108	1.9	364	4.8		
Total ⁵	499	100.0	108	100.0	761	100.0	618	100.0	5,788	100.0	7,649	100.0		
	Man.		Sask.		Alta.		BC		YT		NWT		Canada	
	'000	%	'000	%	'000	%	'000	%	'000	%	'000	%	'000	%
Non-movers ¹	488	52.1	474	56.0	749	44.5	969	42.3	6	29.9	14	39.1	10,930	51.5
Movers ²	450	47.9	372	44.0	935	55.5	1,323	57.7	14	70.1	23	60.9	10,309	48.5
Non-migrants ³	259	27.6	172	20.4	426	25.3	520	22.7	5	26.5	9	24.9	4,985	23.5
Migrants ⁴	191	20.3	200	23.6	509	30.2	803	35.1	9	43.6	13	36.0	5,324	25.1
Within same province	96	10.3	130	15.4	253	15.0	460	20.1 ^r	1	6.5	3	8.0	3,494	16.5
From different province	57	6.1	53	6.2	175	10.4	197	8.6	6	31.9 ^r	9	24.1	915	4.3
Province of residence in 1971 not stated	9	1.0	7	0.9	19	1.1	32	1.4 ^r	*	1.6	1	1.6	195	0.9
From outside Canada	28	3.0	10	1.2	62	3.7	115	5.0	1	3.5	1	2.2	720	3.4
Total ⁵	938	100.0	846	100.0	1,684	100.0	2,291	100.0	20	100.0	37	100.0	21,239	100.0

¹Persons living in same dwelling as on June 1, 1971 and June 1, 1976.²Persons whose dwelling as of June 1, 1976 was in a different dwelling than that of June 1, 1971.³Persons whose residence as of June 1, 1976 was in a different dwelling but in the same municipality as that of June 1, 1971.⁴Persons whose residence as of June 1, 1976 was in a different municipality than that of June 1, 1971.⁵Excludes persons in the armed forces or in other government service, stationed outside Canada.

*325 persons.

4.62 Population 5 years and over, net migration by province, 1971-76¹

Province or territory	1971-76		Total net internal migration	Immigration ²	Net migration ⁴
	In-migration ³	Out-migration			
Newfoundland	19,965	26,845	-6,880	4,180	-2,700
Prince Edward Island	11,560	9,175	2,385	1,695	4,080
Nova Scotia	55,775	50,380	5,395	12,535	17,930
New Brunswick	46,880	37,570	9,310	13,220	22,530
Quebec	79,680	139,480	-59,800	108,200	48,400
Ontario	203,895	256,400	-52,505	363,615	311,110
Manitoba	57,165	83,765	-26,600	28,265	1,665
Saskatchewan	52,555	82,700	-30,145	9,885	-20,260
Alberta	175,045	113,185	61,860	61,895	123,755
British Columbia	197,365	101,480	95,885	114,670	210,555
Yukon	6,310	5,905	405	685	1,090
Northwest Territories	8,925	8,215	710	835	1,545

¹Excludes persons in the armed forces or in other government service, stationed outside Canada.²Excludes not-stated category for province of residence, 1971.³Includes return migrants.⁴Excludes emigrants.

4.63 Migrant population 5 years and over, by urban or rural locality of residence in 1971 and 1976

Locality of residence in 1971	Locality of residence in 1976					Total migrants (by residence in 1971)
	Urban			Rural		
	Total	Census metro- politan areas	Census agglomerations	Non-census metropolitan areas	Total	
Internal migrants						
Total	3,351,125	2,173,150	421,540	756,435	1,253,225	66,970
Census metropolitan areas (CMA) ¹	1,800,070	1,405,485	132,150	262,435	522,785	23,105
Census agglomerations (CA)	324,080	156,180	96,810	71,090	139,830	19,925
Non-CMA or non-CA	1,034,895	479,470	169,875	385,550	540,340	21,425
Residence of CMA or CA unknown	192,085	132,015	22,705	37,365	50,280	39,940
Residence urban						
Total	2,503,055	1,725,385	284,535	493,135	907,365	52,550
Census metropolitan areas (CMA) ¹	1,716,965	1,339,955	126,315	250,695	501,465	22,150
Census agglomerations (CA)	297,040	144,695	86,285	66,060	133,705	19,335
Non-CMA or non-CA	489,045	240,730	71,935	176,380	272,185	10,060
Residence rural						
Total	655,985	315,750	114,300	225,935	295,580	11,900
Census metropolitan areas (CMA) ¹	83,105	65,530	5,835	11,740	21,325	960
Census agglomerations (CA)	27,035	11,480	10,525	5,030	6,115	580
Non-CMA or non-CA	545,840	238,740	97,940	209,160	268,145	10,360
Urban or rural residence unknown	192,085	132,015	22,705	37,365	50,280	2,520
External migrants (outside Canada)	651,085	562,760	33,530	54,795	68,590	51,770
Total migrants ^a (by residence in 1976)	4,002,210	2,735,910	455,070	811,230	1,321,815	71,020
					201,540	1,049,255
						5,324,025

¹As defined for the 1976 Census.

*Excludes persons in the armed forces or in other government service, stationed outside Canada.

4.64 Persons granted Canadian citizenship, 1968-78

Year	Total	Year	Total
1968	60,189	1974	130,278
1969	59,900	1975	140,688
1970	57,556	1976	125,000
1971	63,668	1977	107,899
1972	80,866	1978	223,214
1973	104,697	Total	1,153,955

Sources

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- 4.22 Statistics Division, Finance and Management Branch, Indian and Inuit Affairs Program, Department of Indian Affairs and Northern Development.
- 4.32 - 4.51 Health Division, Social Statistics Field, Statistics Canada.
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- 4.64 Communications Branch, Department of the Secretary of State.

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Health status

5.1

To determine the state of health of a nation, one must first look at patterns of illness and what is done to prevent and deal with illness. Much of this chapter describes how the resources of Canadian society, on national, provincial and local levels, are used to combat illness.

There are many dimensions of health and illness in society. What are usually called health services are really sickness or treatment services. Further improvement in the health of Canadians will depend on a better knowledge of the human body, quality of the environment, and individual lifestyles rather than on improvements in health care services.

Despite the complexities of defining good health, there are various ways in which some fairly dependable measures of the state of health may be obtained. One attempt to gain information from a nationwide study of the population was a Canadian sickness survey of 1950-51. The Nutrition Canada study of 1970-72 was a national review of the impact of nutrition on health. A Canada health survey conducted during 1978-79 will provide figures on many aspects of health, lifestyle, illness and use of health services.

The most widely used measures of health status, based on available information, are life expectancy, infant mortality, causes of death, hospital and other morbidity data.

Hospital statistics provide a comprehensive source of information on patterns of illness and disability. However, there is little information available about the chronically disabled and the number of days Canadians stay at home in bed because of illness.

Life expectancy

5.1.1

Trends in life expectancy, infant mortality and causes of death in Canada are depicted in vital statistics tables in Chapter 4. Over the last 40 years expectation of life at birth has improved steadily for both males and females. In 1976 it reached 70.2 years for males and nearly 77.5 years for females. A major reason for the overall increase is the drop in infant mortality.

The difference between male and female life expectancy increased from 2.1 to 7.3 years between 1931 and 1976. This difference is reflected in lower death rates for women at all ages and a substantially larger decrease for female death rates compared to male death rates.

Infant mortality

5.1.2

Death rates for both male and female infants under one year of age declined about 65% between 1951 and 1976. The improvement is due to better health care before and after birth, improved nutrition and living standards and a decline in the number of children born to older mothers. However the death rate in Canada in recent years was still 20% to 25% higher for male infants than for females.

Causes of death

5.1.3

The leading causes of death in infancy are considerably different from those at later ages. Most infant deaths occur during or shortly after delivery and most are caused by birth defects and conditions specific to the period immediately before and after birth. After the first week of life most infant deaths are due to congenital anomalies, acute infections of the respiratory tract or different kinds of accidents.

Between the ages of one and 14, death rates appear to be gradually stabilizing at low levels. However death rates for males in these age categories, as in all others up to age 80, are higher than those for females. More than half the deaths of children between age one and 14 are due to motor vehicle and other accidents.

In the age groups 15-19 and 20-24, a serious trend in the last 10 years has been an increase in death rates in both sexes. Furthermore, the rate for males is three times as

great as for females. At these ages the most important causes of death are motor vehicle and other accidents and suicide.

Between ages 25 and 44 the death rate for men is twice that for women. For both sexes, but particularly for men, motor vehicle accidents, other accidents and suicides remain important causes of death. In this stage of life ischemic heart disease (in which the heart muscle has its own blood supply restricted) becomes a significant cause of death for men. For women, cancer of the breast, uterus, ovary and gastro-intestinal tract begin to contribute noticeably to the total number of deaths, as do cerebrovascular diseases (strokes).

With increased age the proportion of deaths due to cerebrovascular disease, respiratory diseases and various types of cancer increases. Until the most advanced age categories male deaths continue to exceed those of females. One of the most notable

Heart diseases account for 40% of all deaths among men aged 45 to 64. Cancer is the second leading cause of death in the middle and later years. Rates of both are higher for men than for women.

differences between males and females is the higher proportion of male deaths due to ischemic heart disease, respiratory diseases and lung cancer and cirrhosis of the liver, all of which are related to lifestyle factors including smoking, drinking, exercise and stress.

A review of causes of death, by sex and age, raises questions about what proportion of deaths at early ages might be prevented for males and females, but particularly for males. Many deaths might be prevented through attention to lifestyle factors and the potential for accidents. For females a number of deaths are the result of illnesses which may be treated if detected at early stages.

5.1.4 Specific diseases or disabilities

Statistics Canada maintains registries and does special analyses that relate to particular disease conditions, their treatment and mortality resulting from them. Some of these information systems are developed in co-operation with voluntary agencies. Other data are derived from notifications which physicians are required by law to make to public health authorities. Although not all serious conditions are covered, these records are a valuable source of health status information.

Heart disease. The death toll from heart disease in Canada in 1975 was 56,970, or 250 deaths for each 100,000 persons. The male rate was higher than the female, 298 against 202. Among men aged 45 to 64, heart disease accounted for nearly 40% of all deaths, and the single diagnostic class ischemic heart disease killed 9,293 of the 25,367 men in this group. In 1975 heart disease required 3,840,000 days of care in general and allied special hospitals.

The Canadian Heart Foundation, inaugurated in 1955, had by mid-1977 devoted \$57.1 million to cardiovascular research in Canada's universities and hospitals; its 1977-78 budget alone provided \$8.7 million. The Medical Research Council spent \$7.1 million on cardiovascular research in 1978-79.

Cancer. As the second leading cause of death in Canada, cancer accounts for about one of every five deaths, most of them occurring in the middle and later years of life. The death rate from cancer dropped slightly, from 150.4 per 100,000 population in 1974 to 149.2 in 1975. The rate for females decreased from 134.4 to 131.1, and for males increased from 166.3 to 167.4.

Statistics Canada started a national cancer incidence reporting system in January 1969 in co-operation with the National Cancer Institute and the nine existing provincial tumor registries; a centralized registry has not yet been organized in Ontario. Participating provinces send a simple notification card with basic patient and diagnostic information for each new primary site of malignant neoplasm discovered. Data for 1976 are given in Tables 5.5 and 5.6.

Special provincial agencies for cancer control, usually in the health department or a separate cancer institute, carry out cancer detection and treatment, public education, professional training and research in co-operation with local public health services physicians and the voluntary Canadian Cancer Society branches. Provincial cancer programs operate both under the terms of provincial health insurance plans and through special supplementary services for cancer patients.

Renal failure. A Canadian renal failure register operated by Statistics Canada was started by and operates in co-operation with the Kidney Foundation of Canada. Its purpose is to register and follow all patients depending on artificial kidney treatment (chronic peritoneal or hemodialysis) or receiving kidney transplants since January 1973 in Canada. Table 5.8 reports the status of renal failure patients in Canada for 1975 and 1976. During 1975, dialysis units reported on 1,488 patients; new patients registered totalled 690. During 1976, hospitals reported on 1,752 patients; new patients registered totalled 722. The number of kidney transplants increased to 341 from 294 in 1975.

Notifiable diseases. The number and rates per 100,000 population of notifiable diseases by province in 1977 are shown in Table 5.24. Most predominant were venereal diseases (54,287) and streptococcal sore throat and scarlet fever (23,480). There were 8,832 reported cases of measles, 4,851 cases of infectious hepatitis, 4,228 salmonella infections, 3,197 cases of tuberculosis, and 2,159 of rubella or German measles. Rates for other diseases, although lower, are significant in terms of public health.

Of particular interest are venereal diseases, because public health authorities estimate that their real incidence may be three to four times the number of cases reported. The 1977 figure of 2,998 cases of syphilis, or 12.9 per 100,000 population, shows a decrease from the 1976 figure of 3,952. Total gonorrhea cases in 1977 were 51,233, or 220 per 100,000 reduced from 229.5 per 100,000. For the first time in recent years, the number of reported cases and rate per 100,000 for gonococcal infections has declined from one year to the next.

Provincial health departments have expanded public venereal disease clinics, which provide free diagnostic and treatment services. In some areas these departments pay private physicians to give free treatment to the poor. In addition, the provinces supply free drugs to physicians for treating private cases. Local departments or district health units carry out case finding, follow-up of contacts and health education programs, assisted by provincial directors of venereal disease control.

At one time tuberculosis was an extremely serious health problem. The reported incidence of this disease has decreased steadily in recent years. However, in 1977 there were 3,197 new active cases, or 13.7 per 100,000 population, an increase over the 1976 figure at 2,601 cases or 11.4 per 100,000. Most new cases of tuberculosis are discovered by practising physicians, but provincial health departments assisted by voluntary agencies continue to conduct anti-tuberculosis case finding programs through community tuberculin testing and X-ray surveys, with special attention to high risk groups, routine hospital admission X-rays and follow-up of arrested cases. Provincial tuberculosis programs include vaccination for children or high risk groups and free treatment, including hospital care, drugs and rehabilitation services.

Canada's health insurance plans

5.2

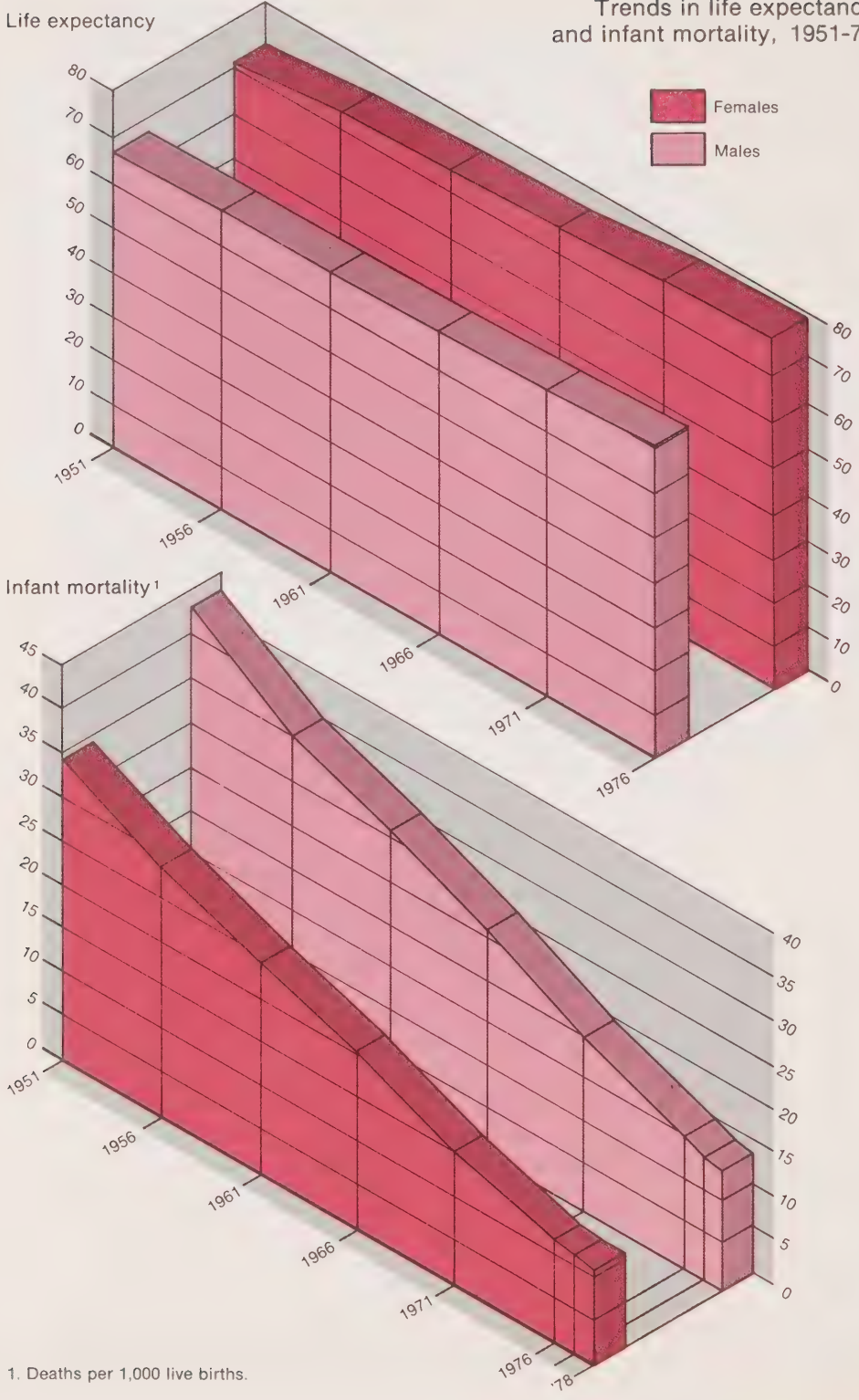
The Canadian program of health insurance consists of individual provincial hospital and medical care plans which are supported by contributions from the federal government. Although details of the provincial plans vary, each must meet minimum requirements to qualify for the federal contribution. For many years about 99% of the population of Canada has been covered for both hospital care and physicians' services.

Federal legislative framework

5.2.1

Federal participation in the national health insurance programs is governed by provisions of the Hospital Insurance and Diagnostic Services Act, 1958, the Medical Care Act of 1966 and the Federal-Provincial Fiscal Arrangements and Established Programs Financing Act, 1977.

Trends in life expectancy and infant mortality, 1951-78



1. Deaths per 1,000 live births.

Hospital insurance. The Hospital Insurance and Diagnostic Services Act, which took effect in July 1958, was designed to make available to all eligible residents a wide range of hospital and diagnostic services, subject to medical necessity, at little or no direct cost to the patient, thereby removing financial barriers to adequate care which existed previously for many residents.

Under the act, contributions by the federal government are authorized for programs administered by the provinces providing hospital insurance and laboratory and other services in aid of diagnosis.

There are five general principles: comprehensiveness of services; universal availability of coverage to all eligible residents; no barriers to reasonable accessibility of care; portability of benefits; and public administration of the provincial programs.

Facilities covered include general, rehabilitation (convalescent), and extended care (chronic) hospitals together with specialized hospitals such as those providing maternity or pediatric care. The program may also cover diagnostic services in non-hospital facilities. Specifically excluded are tuberculosis hospitals and sanatoria, hospitals or institutions for the mentally ill, and nursing homes, homes for the aged, infirmaries or other institutions whose purpose is to provide custodial care.

In development of hospital insurance legislation, existing traditions were maintained as far as possible. The pattern of hospital ownership and operation that existed before the act came into force was retained and provincial autonomy was not infringed. Consequently, more than 20 years later, almost 90% of the beds covered by hospital insurance are located in facilities owned and operated by voluntary bodies and municipalities. The policy of provincial autonomy allows each province to decide on methods of administration and of financing its share of program costs while still ensuring a basic uniformity of coverage throughout the country. All provinces and territories have participated since 1961. Details of services are provided in Section 5.3, Summary of provincial plans.

Insured in-patient services must include accommodation, meals, necessary nursing service, diagnostic procedures, most pharmaceuticals, the use of operating rooms, case rooms, anesthesia facilities, and radiotherapy and physiotherapy if available. Similar out-patient services may be included in provincial plans and authorized for contribution under the act. All provinces include a fairly comprehensive range of out-patient services.

The individual may select the hospital in which he will be treated provided his physician has admitting privileges, and the only limit to the duration of insured services is the extent of medical necessity. During a temporary absence, coverage is portable anywhere in the world for in-patient services, and in the case of most provinces for out-patient services also, although such benefits are subject to provincially regulated maxima for rates of payment and length of hospital stay.

Provinces may include additional benefits in their plans without affecting the federal-provincial agreements. Some provide additional services such as nursing home care. These additional services are not cost-shared under hospital insurance.

The principles of universal availability of benefits to all eligible residents and portability of benefits are reflected in provisions of each provincial program. Although provincial plans in general stipulate a waiting period of three months, coverage may continue from the province of previous residence. First-day coverage is generally provided for the newborn, immigrants, and certain other categories of persons without prior coverage in other provinces. A health insurance supplementary fund has been established for residents who have been unable to obtain coverage or who have lost coverage through no fault of their own.

Provinces may raise their portion of insurable costs as they wish, provided that access to services is not impaired. All provinces finance their share in whole or part from general revenue.

Medical care. Before the establishment of government-administered medical insurance, voluntary prepayment arrangements to cover the cost of physicians' services had developed in public and private sectors. By the end of 1968, basic medical or surgical coverage, or both, were being provided to about 17.2 million Canadians, 82% of the population. Voluntary plans in the private sector covered about 10.9 million, or 52%,

and public plans covered 6.3 million, or 30%. By 1972 all 10 provinces and the two territories had met the criteria stipulated under the Medical Care Act as conditions for federal cost-sharing, and virtually the entire eligible population was insured for all required medical services plus a limited range of oral surgery.

Members of the Canadian Armed Forces, the Royal Canadian Mounted Police, and inmates of federal penitentiaries whose medical care requirements are met under alternative provisions are excluded. Services by physicians that are not medically required, such as examinations for life insurance, services covered under other legislation, such as immunization where available through organized public health services, and services to treat work-related conditions already covered by worker compensation legislation are not covered.

Comprehensive coverage must be provided for all medically required services rendered by a physician or surgeon. There can be no dollar limit or exclusion except on the ground that the service was not medically required. The federal program includes not only those services that have been traditionally covered as benefits by the health insurance industry, but also those preventive and curative services that have been traditionally covered through the public sector in each province, such as medical care of patients in mental and tuberculosis hospitals and services of a preventive nature provided to individuals by physicians in public health agencies.

The plan must be universally available to all eligible residents and cover at least 95% of the total eligible provincial population (in fact the plans cover over 99%). A uniform terms and conditions clause is intended to ensure that all residents have access to coverage and to prevent discrimination in premiums because of previous health, age, non-membership in a group, or other considerations. If a premium system of financing is selected, subsidization in whole or in part for low-income groups is permitted. It has been left to the individual province to determine whether its residents should be insured on a voluntary or compulsory basis. Utilization charges at the time of service are not precluded by the federal legislation if they do not impede, either by their amount or by the manner of their applications, reasonable access to necessary medical care, particularly for low-income groups. The plan must provide portability of benefit coverage when the insured resident is temporarily absent from the province and when moving residence to another participating province. The provincial medical care insurance plan must be administered on a non-profit basis by a public authority that is accountable to the provincial government for its financial transactions. It is permissible for provinces to assign certain administrative functions to private agencies.

These criteria leave each province flexibility to determine its own administrative arrangements for its medical care insurance plan and to choose how it will be financed — through premiums, sales tax, other provincial revenues, or by combination of methods.

Established programs financing. Late in 1976, following several years of negotiations, the provinces and the federal government agreed to new financial arrangements for medical care and hospital insurance, among other fiscal matters. The Federal-Provincial Fiscal Arrangements and Established Programs Financing Act, 1977, assented to on March 31, 1977, contained consequential amendments to the Medical Care Act and the Hospital Insurance and Diagnostic Services Act. Since April 1, 1977, federal contributions to the established programs of hospital insurance, medical care and post-secondary education are no longer directly related to provincial costs, but take the form of the transfer of a predetermined number of tax points, and related equalization and cash payments.

Total federal contributions, in general terms, are now based on the current escalated value of the 1975-76 federal contributions for the programs in question. The tax room vacated by the federal government permitted the provinces to increase their tax rates so as to collect additional revenue without necessarily increasing the total tax burden on Canadians. The yield from the new provincial taxes will normally increase faster than the rate of growth of the Gross National Product (GNP). The cash payments are conditional upon the provincial health insurance plans meeting the criteria of the federal health insurance legislation.

The cash payments, approximating the value of the tax room transferred, are per capita payments calculated in accordance with the Federal-Provincial Fiscal Arrangements and Established Programs Financing Act, 1977. These payments will be escalated yearly in accordance with changes in the GNP, and adjusted gradually so that all provinces at the end of five years will be receiving equal per capita cash contributions. The federal government is also making additional equal per capita cash contributions yearly to the provinces to contribute toward the costs of certain extended health care services.

Constitutional responsibilities in the health field

5.2.2

Government involvement in health care services in 1867, at Confederation, was minimal. For the most part the individual was compelled to rely on his own resources and those of his family group, and hospitals were administered and financed by private charities and religious organizations.

The only specific references to health in the distribution of legislative powers under the British North America Act allocate to Parliament jurisdiction over quarantine and the establishment and maintenance of marine hospitals, and to provincial legislatures jurisdiction over the establishment, maintenance and management of hospitals, asylums, charities and charitable institutions in and for the province, other than marine hospitals. In 1867 this latter reference probably was meant to cover most health care services. Since the provinces were assigned jurisdiction over generally all matters of a merely local or private nature in the province, it is probable that this power was deemed to cover health care, while the provincial power over municipal institutions provided a convenient means for dealing with such matters. Thus provision of health care services has been traditionally acknowledged as primarily a provincial responsibility. But a measure of responsibility in health matters has been expressed over the years in many federal programs and policies.

Federal-provincial co-operation

5.2.3

Since the federal and provincial governments share responsibility for dealing with health matters, a formal structure has been established for federal-provincial co-operation. It comprises the following: conference of ministers of health; conference of deputy ministers of health; and federal-provincial advisory committees on institutional care services, community care services, health promotion and lifestyle, environmental and occupational health and health manpower. The conferences of ministers and deputy ministers of health involve matters of promotion, protection, maintenance and restoration of the health of the Canadian people. Normally, the conference of ministers meets annually and the conference of deputy ministers twice a year. The five advisory committees facilitate the work of the ministers and deputy ministers, and assist them in achieving objectives, identifying major issues and solving problems. They may set up groups to deal with particular subjects requiring more detailed study.

Federal health services

5.2.4

The national health and welfare department is the principal federal agency in health matters. It is responsible for the overall promotion, preservation, and restoration of the health of Canadians, and for their social security and social welfare. The department acts in conjunction with other federal agencies and with provincial and local services. The provincial governments actually administer health services. Although the patterns of health services are similar, their organization and administration vary from province to province.

Other federal agencies which carry out specialized health functions include the health division, Statistics Canada, which gathers health and vital statistics, the veterans affairs department which administers hospitals and health services for war veterans, and the agriculture department which has certain responsibilities for health aspects of food production. The fitness and amateur sport program encourages Canadians to participate in activities oriented to fitness and recreation.

Branches of the national health and welfare department are responsible for health protection, medical services, and health services and promotion. The Medical Research

Council supports research in health sciences in Canadian universities and affiliated institutions.

In the health and welfare department, an integrated program protects the public against unsafe foods, drugs, cosmetics, medical and radiation-emitting devices, harmful microbial agents and technological and social environments, environmental pollutants and contaminants of all kinds, and fraudulent drugs and devices.

The health services and promotion branch administers federal aspects of Canada's two major health programs, hospital and medical insurance; supports health care delivery system and resource development; undertakes health promotion; and both supports and conducts research.

5.2.5 Provincial and local health services

Regulation of health care, operation of health insurance programs and direct provision of some specialized services rest with the provincial governments; some health responsibilities are delegated to local authorities. Although provinces generally assign primary responsibility for health to one department, the distribution of function varies. Some provinces have combined health and social services within the same department. Others maintain liaison between departments responsible for these related services.

In a number of provinces, health insurance programs are administered by semi-autonomous boards or commissions, or by a separate department. Some report directly to a minister of health; others are under the jurisdiction of a deputy minister. Several provincial health insurance programs are operated directly by health departments.

In each province both institutional and ambulatory care for tuberculosis and mental illness are provided by an agency of the department responsible for health, with increasing attention to preventive services. Programs related to other particular health problems such as cancer, alcoholism and drug addiction, venereal diseases and dental conditions have been developed by government agencies, often in co-operation with voluntary associations. A number of provincial programs serve specific population groups such as mothers and children, the aged, the needy and those requiring rehabilitation.

Environmental health, involving education, inspection and enforcement of standards, is frequently shared by health departments and other agencies.

Public health or community health units are among the most decentralized. Some are responsible for local health education, school health and organized home care. Although local and regional involvement in health services has been concentrated in hospital planning and some public health aspects, several provinces have inaugurated district and regional boards.

5.3 Summary of provincial plans

This review of provincial health insurance plans is a summary for general information only, and is not an official description of details of the programs. It presents the main features of the plans as at September 1979. Precise current information is available from the provincial agencies responsible for administration of the plans. Provinces are listed from east to west across Canada.

Newfoundland. Provincial hospital and medical care insurance plans are distinct entities. The hospital insurance plan is administered by the health department and the provincial medical care plan is administered by the Medical Care Commission which is responsible to the minister of health. Both are non-premium plans covering all eligible residents. Benefits are limited to the insured services of the national hospital insurance and medical care programs.

There is an authorized charge for in-patient ward and preferred accommodation services in general and allied special hospitals of \$3 a day to a maximum of 15 days. There are exemptions from these charges for those re-admitted for the same illness within 60 days (cumulative charge \$45) and patient transfers within 15 days (cumulative charge \$45). Exemptions are also made for patients of 65 years and over and for patients certified by the social services department as being unable to pay.

Prince Edward Island. Hospital and medical care insurance plans are administered by commissions responsible to the provincial health minister. Both are non-premium plans covering all eligible residents. Benefit coverage is limited to the insured services of the national hospital insurance and medical care programs. There are no authorized charges for services provided.

Nova Scotia. The hospital insurance plan is administered by the provincial health department. The provincial medical care insurance plan called Medical Services Insurance (MSI) is operated by a conjoint public authority consisting of the Health Services and Insurance Commission and Maritime Medical Care Incorporated. The commission is responsible to the minister of health.

Maritime Medical Care Incorporated is a doctor-sponsored prepayment agency authorized to act on a non-profit basis as the administrative arm and fiscal agent to the public authority. It undertakes registration of insured residents and payment of claims for insured services. The corporation is permitted to continue its private sector activities, providing coverage for services that are not insured under the provincial medical care insurance plan.

Both provincial government plans are non-premium and cover all eligible residents. MSI coverage, apart from the insured services of the medical care program, includes additional benefits such as a dental insurance plan for children and a pharmacare plan for the elderly. There are no authorized charges for services provided under the provincial hospital insurance plan.

New Brunswick. Both the medical care insurance plan (officially called Medicare) and the hospital insurance plan are administered by the provincial health department. Both are non-premium plans covering all eligible residents.

In addition to insured medical care services, medicare coverage includes a prescription drug program for the elderly, for cystic fibrosis patients and for social service benefit recipients.

Authorized charges are made on admission to all hospitals. Charges for in-patient services are \$10 for persons under 65 and \$4.65 for those 65 and over. Charges for out-patient services are \$6 for those under 65 and \$2.65 for those 65 and over. Exemptions are provided for persons and their dependents receiving social aid, for certain specified illnesses and services, and under some circumstances of transfer or re-admission.

Quebec. The health insurance plan is administered by the Quebec Health Insurance Board, which administers a variety of programs and is responsible to the minister of

Canadians have had almost universal coverage for hospital insurance since 1961 and for medical care insurance since 1971. Some of the provinces have introduced additional benefits such as dental care for children, a prescription drug plan for the elderly, extended care in nursing homes, eyeglasses and hearing aids.

social affairs. The hospital insurance plan is administered by the ministry of social affairs. Both are non-premium plans which cover all qualified residents of Quebec.

Coverage of the Quebec health insurance plan includes a broad range of benefits beyond the insured services of the medical care program: dental services for children, a drug program for the elderly and social assistance beneficiaries, provision of prostheses, orthopedic and other appliances and of functional aids for the visually handicapped.

A feature of the Quebec plan is the 72 local community service centres used to provide primary care in health and social services. Their impact on providing services and the range of services varies from place to place. Many of the centres provide home care services.

The term "centres d'accueil" used in Quebec applies to child day care centres, transition centres, short-term rehabilitation centres, and supervised residences when lengthier rehabilitation processes are needed.

There are authorized user charges for those 18 years of age and older of \$8 a day or \$240 a month for in-patient services in hospital centres for prolonged care, including prolonged care units in general hospitals. Graduated exemptions from these charges are made, depending on taxable income and number of dependents.

Ontario. The Ontario Health Insurance Plan (OHIP) is a combined hospital and medical care insurance plan administered by the health ministry. The plan normally requires payment of premiums by or on behalf of insured residents. It is semi-voluntary, but compulsory for employee groups of 15 or more persons resident in Ontario.

The premium amounts are \$20 a month for a single person and \$40 a month for a family of two or more, with premium exemption or assistance for those of 65 years or older or for families with a member of 65 or older, who have resided in the province for at least the 12 previous months, and for persons with limited income.

There are authorized charges of \$10.05 a day after 60 days for chronic, rehabilitative and convalescent care in hospitals and designated nursing homes. Certain exemptions are made from these charges for patients who meet specified criteria of health status, family status and income, and for those qualifying for particular general welfare and family benefits.

OHIP coverage, in addition to the insured services of the hospital insurance and medical care programs, includes extra benefits such as home care services and extended care in nursing homes and homes for the aged when regular nursing service and medical supervision are required. The extended care benefit is subject to a daily co-payment by the patient similar to an authorized charge for chronic patients receiving care. The extended care benefit is subject to a minimum requirement of 12 months' residence in the province.

The health ministry also administers a drug benefit plan for the elderly, for social assistance beneficiaries and for residents in nursing homes and homes for special care who are entitled to receive extended care.

Manitoba. A combined provincial hospital and medical care insurance plan, the Manitoba health services insurance plan, is administered by a single public authority, the Manitoba Health Services Commission, and is responsible to the provincial health minister. It is a non-premium plan providing coverage for all eligible residents.

The plan provides the insured services of the hospital insurance and medical care programs, and a broad range of services including care in personal care homes such as nursing homes and other designated facilities. The commission administers a nearly-universal prescription drug program, but social assistance recipients or other residents entitled to free prescription drugs under other federal or provincial programs are excluded.

Manitoba has a comprehensive continuing care program which co-ordinates access to institutional and home care services.

There are no user charges for hospital care within the scope of the hospital insurance program. Personal care services are an insured benefit for which Manitoba residents are subject to a charge of \$7 a day.

Saskatchewan. The medical care insurance plan is administered by a commission responsible to the provincial health minister. The Saskatchewan hospital services plan is administered by the health department. Both are non-premium plans and provide coverage for all eligible residents. The Swift Current health region administers its own medical care plan with the commission providing the region a basic per capita grant related to the per capita expenditure on behalf of other residents of the province. There are no authorized user charges for insured hospital services.

The medical care insurance plan provides benefits beyond the insured services of the medical care program. With certain exceptions such as registered Indians, Saskatchewan residents holding valid health services cards are eligible for a wide variety of other benefits administered by the health department. Saskatchewan has been a leader in introducing such benefits on a nearly universal basis, including a subsidized hearing aid plan, the provision of aids to independent living, a prescription drug plan, and a dental plan for children. The NHW medical services branch purchases such

services on behalf of registered Indians in Saskatchewan from the provincial government.

Saskatchewan has launched a provincial home care program which will include long-term home care for people who might otherwise require long-term institutional care. An ability-to-pay model will apply except for benefits otherwise available under universal programs. No charge will be levied from those receiving old age security, guaranteed income supplement and the provincial supplement.

Alberta. Hospital insurance and medical care insurance plans are operated as distinct entities within the hospitals and medical care department. Eligibility for provincial hospital insurance coverage depends on medical care insurance status.

A combined premium is charged for medical care and hospital insurance. While all eligible residents are required to be registered with the Alberta Health Care Insurance Plan and pay any required premiums, the plan permits a resident who is not a dependent, and who is registered and is not in default of premiums, to opt out of that plan and the provincial hospitalization benefits plan on a yearly basis. Only a small number have opted out.

Premium amounts are \$7.65 a month for single persons and \$15.30 a month for a family of two or more. Premium exemption or assistance is provided for those of 65 years or older or families with a member of 65 or older and for those with limited income.

A charge of \$5 per admission is made for services in general hospitals, with exemptions for the newborn, those 65 years and older and dependents, transfers, readmissions, out-of-province and other special cases. After 120 days following admission to auxiliary hospitals, there is a charge of \$5.50 a day.

The Alberta Health Care Insurance Plan provides benefits beyond the insured services of the medical care program. It also makes available to paid-up, registered residents who are unable to obtain Blue Cross coverage in a group subscriber plan, an optional health services contract at subsidized rates. Residents who are 65 or over are entitled to this coverage without premium payments on the same basis as for the basic hospital and medical care coverage.

The provincial hospital plan provides an extensive nursing home benefit.

Further additional benefits are provided for registered residents of 65 or over through an extended health benefits program, administered in part by the hospitals and medical care department and in part by the social services and community health department. Program benefits include dental care, eyeglasses, hearing aids and medical and surgical appliances and supplies.

A co-ordinated home care program for Alberta, launched in the fiscal year 1978-79 under the community and social services department, was expected to be implemented province-wide in four years.

British Columbia. Hospital insurance and medical care insurance plans are operated as separate plans in the provincial health ministry.

All qualified residents are entitled to benefits under the provincial Hospital Insurance Act without being required to register or pay premiums. Unlike hospital insurance plans in other provinces, the plan does not provide an out-of-province benefit for hospital out-patient services with the exception of renal dialysis.

The medical services plan of British Columbia is a voluntary plan administered by a commission in the health ministry. A broad range of benefits beyond the insured services of the medical care program is included in the coverage, mostly on a limited basis, available to insured persons only within British Columbia. There is also a free prescription drug program for the elderly; a universal pharmacare plan; and a long-term care program of placement services, home care and long-term institutional care.

Premiums charged for the medical care program are \$7.50 a month for a single person, \$15 for two persons and \$18.75 for a family of three or more. Premium exemption or assistance is provided for those with limited income.

There is an authorized in-patient charge of \$4 a day for general and rehabilitation hospital services, with exemptions for the newborn and organ donors. For out-patient

services there is a unit charge of \$2 for emergency, day care and minor surgery and \$1 for other designated services. Authorized charges for extended in-patient care are \$6.50 a day for those over 19 years and \$1 a day for those under 19.

5.3.1 Territorial plans

Northwest Territories. The NWT health care plan includes both hospital and medical care insurance. It is a non-premium plan covering all eligible residents. In addition to insured services of the national hospital insurance and medical care programs, the plan provides full travel coverage plus living expenses while away from home for treatment of cancer, cystic fibrosis, tuberculosis or mental illness. Assistance is also provided toward travel costs to receive general medical treatment away from the home community. The cost of drugs required to treat specific chronic diseases is covered. There are no authorized charges for insured hospital services.

Yukon. Insurance is provided by Yukon hospital insurance services and the Yukon health care insurance plan. The monthly premium for medical care insurance is \$4.75 for a single person, \$9.25 for a couple and \$11.00 for a family. However, coverage depends on residency status rather than on payment of premiums. Persons of 65 and older are premium-exempt. There are no authorized charges for insured hospital services. Coverage is limited to the insured services of the national hospital insurance and medical care programs.

5.3.2 Health services for specific groups

The national health and welfare department provides or arranges health services for persons whose care is by custom or legislation a federal responsibility.

Indians and Inuit, as residents of a province or territory, are entitled to benefits of medical care and hospital insurance. These insured benefits are supplemented by the NHW department, which helps in arranging transportation and obtaining drugs and prostheses. A comprehensive public health program provides dental care for children, immunization, school health services, health education, and prenatal, postnatal and well-baby clinics. A native alcohol abuse program funds locally-run programs. Since Indians and Inuit comprise only 1.0% of the population and are distributed widely throughout Canada, a network of specially designed health facilities operates in almost 200 communities. Increasing numbers of Indians and Inuit are being trained and employed in public health and medical care programs to facilitate understanding and health activities in the communities.

With the exception of insured hospital and medical care programs, administered by the governments of Yukon and Northwest Territories, the NHW department has for many years managed health services for all residents of the two northern territories. These comprise a comprehensive public health program, special arrangements to facilitate interstation communication, and the transportation of patients from isolated communities to referral medical centres. Several university groups provide, on a rotation basis for specified zones, medical personnel and students. Their activities are financed through government contracts and medical care insurance.

As of January 1978, departmental facilities included six hospitals, three health stations and nine health centres in Yukon and four hospitals, 39 nursing stations, six health stations and eight health centres in Northwest Territories.

Under the Quarantine Act, all vessels, aircraft, and other conveyances and their crews and passengers arriving in Canada from foreign countries are subject to inspection to detect and correct conditions that could introduce such diseases as smallpox, cholera, plague and yellow fever. Quarantine stations are located at major seaports and airports. The branch enforces standards of hygiene on federal property including ports and terminals, interprovincial means of transport, and Canadian ships and aircraft.

Medical services branch determines the health status of all persons referred by the employment and immigration commission for Canadian immigration purposes. It also provides or arranges health care services for certain persons after arrival in Canada, including immigrants who become ill en route or while seeking employment. The

branch is responsible for a comprehensive occupational health program for federal employees in Canada and abroad. This includes health counselling, surveillance of the occupational and working environment, pre-employment, periodic and special examinations, first aid and emergency treatment, advisory services and special health programs. Increased attention is given to pre-retirement and stress.

The department advises the ministry of transport on health and safety in Canadian civil aviation. Regional and headquarters aviation medical officers review medical examinations, participate in aviation safety programs, and assist in air accident investigations. There is close liaison with authorities in foreign aviation medicine, with standards usually based on international agreements.

For a number of years, the national health and welfare department assisted in prosthetic and corrective rehabilitation under agreements with most provinces and with the veterans affairs department, and provided a national focal point for related expertise. This activity is being transferred to provincial control.

Medical services physicians provide an assessment and advisory service to the employment and immigration commission on claims for benefits under the sickness and maternity benefit plan. The Canada Pension Plan maintains its own disability assessment service.

Emergency welfare services is responsible for a national capability, embracing government and welfare related non-government agencies, of essential welfare services in any type of emergency in Canada.

In an effort to improve communication through new technology, the branch has participated in telemedicine experiments, with Moose Factory and Kashechewan, Ont. receiving direct consultation on medical and surgical matters through television.

The magnitude of health problems posed by environmental pollution has resulted in a number of activities. The environmental contaminants program is studying effects of mercury pollution from coast to coast. Other environmental contaminants such as cadmium, arsenic and mirex are of growing concern.

Statistics on hospitals and medical care

5.4

Hospital statistics

5.4.1

Canadian hospitals can be categorized according to type of ownership: public, proprietary or federal; and type of service: general, allied special [extended care (chronic), rehabilitation (convalescent), maternity, communicable diseases, pediatric, orthopedic, neurological, cancer, nursing stations, outpost hospitals], mental or tuberculosis. General hospitals, which account for the largest proportion of beds, are divided into teaching (full and partial teaching) and non-teaching, which are further subdivided into varying bed-size groups based on rated bed capacity.

Hospital statistics compiled by the health division of Statistics Canada offer much detail about specific illnesses and disabilities and patterns of treatment. Some provinces also keep detailed records of diagnoses of patients' conditions derived from physicians' medical care insurance claim forms. It is not possible, however, to aggregate this diagnostic information on a national level.

Although hospital morbidity data remain the most comprehensive source of information on patterns of illness and disability, there are no data on illnesses which are self-treated or improved before admission to hospital.

Some of these gaps in information will be filled by data from the 1978-79 Canada health survey, based on both self-reported conditions and some physical measurements performed by nurses. However, despite their limitations, in-patient hospital data will continue to be a useful source of information on illness in Canada.

Table 5.1 data on in-patient separations (deaths and discharges) from hospitals, show how patterns of hospital use differ by diagnostic categories. For example, complications of pregnancy resulted in the highest number of separations with 2,186 per 100,000 persons in 1976 but the average length of stay was only five days. On the other hand, diseases of the circulatory system, with only 1,654 separations per 100,000 persons, resulted in an average of 23 days.

Table 5.2 shows the increase in hospital use with advancing age and a higher number of hospital separations for females than for males.

Overall, almost one-half of hospital cases result in surgery. Tables 5.3 and 5.4 summarize cases undergoing surgery in relation to all separated cases and by type of primary operation, age group and sex. Of the 1,876,793 operations in 1976, 16% were obstetrical procedures, 14% gynecological, 12% abdominal, and 11% orthopedic.

The 10 provinces and two territories reported to Statistics Canada that 57,564 therapeutic abortions were performed during the 12-month period January to December 1977. This represents 3,086 more than for 1976. There were 16 therapeutic abortions per 100 live births in 1977 compared to 15.1 in 1976 (Table 5.7).

The number and bed capacity of hospitals in Canada have varied slightly in recent years. In 1978 there were 1,315 hospitals with a total of 184,655 beds (Table 5.9). The greatest concentration of beds is in public general and allied special hospitals. On a national level there were 7.5 beds in public general and allied special hospitals per 1,000 population. This ratio has increased from 6.5 per 1,000 in 1976 and 6.7 in 1977. Although there was a fairly wide range of bed-population ratios from one province to another, there is considerable variation in type and level of care given by hospitals in the same category; in Yukon and the Northwest Territories, federal hospitals provide most of the care that is comparable to that given in public hospitals in the provinces.

Tables 5.10 and 5.11 both reflect a decline in provision and use of beds in mental hospitals, in contrast to the relative stability in statistics for general and allied special facilities. The long-term nature of care in mental hospitals results in a large number of patient-days in those facilities.

There has been much discussion in recent years of the possibility of increasing efficiency of hospital care and limiting costs through reducing the length of stay in hospital. Suggestions for this include expanding home care programs to permit earlier release from hospital, particularly after surgery, and transferring some patients who require long-term care to less expensive rehabilitation and extended care facilities. Variations in length of stay between types of hospital and provinces are in Table 5.12.

Cost per patient-day in 1977, for reporting public hospitals included expenditures from \$55.86 for chronic-extended care hospitals to \$110.64 for convalescent-rehabilitation hospitals and \$151.87 for general hospitals. Cost per patient-day was higher for some allied special hospitals, ranging up to \$305.25 for pediatric facilities.

Revenue and expenditure for reporting public hospitals are shown per patient-day in Table 5.13 and in total dollar figures in Table 5.14. The labour-intensive nature of hospital care is reflected in the fact that, in 1977, of the \$5.22 billion spent by public hospitals in Canada, 70.9% was for gross salaries and wages. Other expenditures were for medical and surgical supplies (3.4%), drugs (2.4%) and supplies and other expenses (23.3%). The increase in the proportion of hospital costs represented by salaries in recent years is due to increases in both hospital personnel and salaries. Table 5.15 depicts the distribution of people employed full time in hospitals.

5.4.2 Medical care and hospital insurance statistics

There has been almost universal coverage of the Canadian population by hospital insurance since 1961. Table 5.16 shows federal and provincial payments for hospital and diagnostic services. By 1971 all the provinces had introduced programs of medical care insurance cost-shared by the federal government. Table 5.17 shows the increase in federal and provincial payments from nearly \$1.2 billion in 1972 to \$2.0 billion in 1978. Spending for health insurance programs combined (medical and hospital) rose from \$3.6 billion in 1972 to \$8.1 billion in 1978; however, as a percentage of total social security expenditures in Canada this represented a decline from 28.8% to 25.5%.

Some provincial hospital care expenditures are not cost-shared with the federal government. Some of these relate to provincial programs in general and allied special hospitals. Others are specific to mental institutions and chronic care facilities which had not been included in the agreements under hospital insurance or, since April 1977, under block-funding for extended health care. These expenditures increased from \$244 million in 1961 to \$1.24 billion in 1978.

Projected hospital patient-days, Canada

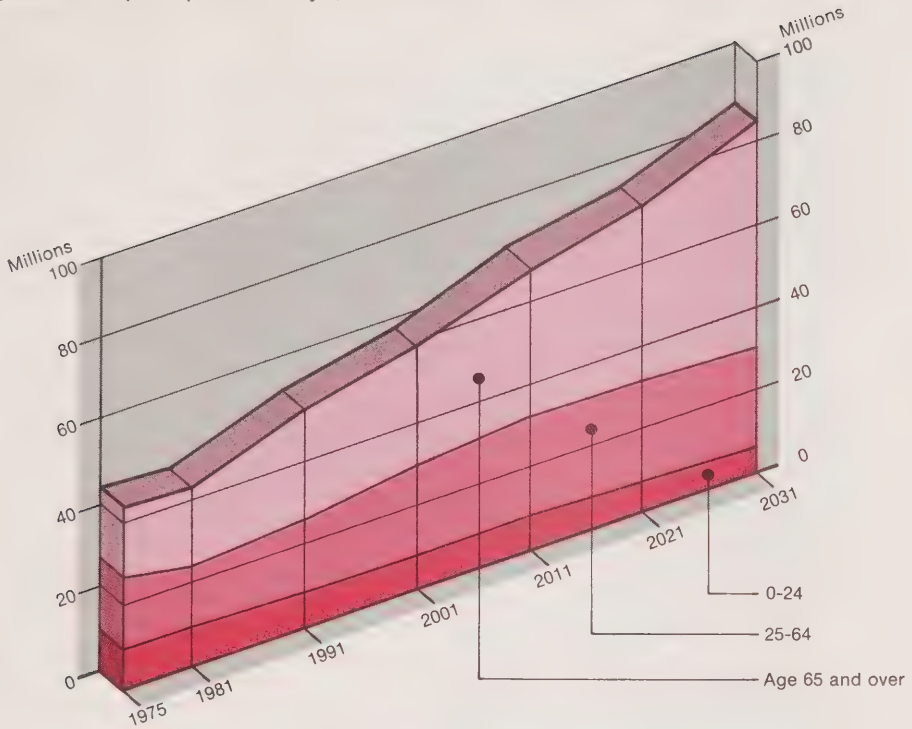


Table 5.18 shows federal and provincial health expenditures other than those covered by the health insurance programs. About \$1 billion in provincial spending covered such programs as pharmacare, denticare, home care and public health. Nearly half a billion in federal funds was devoted to NHW initiatives for programs concerned with food, drugs, immunology, radiation and environmental health, and health services under the veterans affairs department.

Table 5.19 gives a federal, provincial and municipal summary for selected fiscal years ending March 31. For 1978 the total was \$11.4 billion for the three levels of government. Provincial spending amounted to \$6.1 billion, federal \$5.1 billion and the remainder was municipal. A breakdown is given in Chapter 8, Social security, in relation to total social security expenditures in Canada.

Residential special care facilities. Special care facilities provide residents who have special needs with counselling, custodial, supervisory, personal and necessary nursing care. These facilities do not offer the range of active medical treatment provided in general and allied special hospitals. Groups served include the aged, physically handicapped or disabled, emotionally disturbed children, alcohol and drug addicts, delinquents, unmarried mothers and others.

The facilities vary considerably in patterns of financing, ownership and management. Some services provided are supported in whole or in part by federal funds; others are funded entirely from provincial sources; others are largely financed privately or by voluntary associations.

Much of the care is the responsibility of provincial social service agencies. Federal funds to cover some of the services are provided under terms of the Canada Assistance Plan, vocational rehabilitation for disabled persons, established programs financing, and other federal programs. Further information is given in Chapter 8, Social security.

5.5 Health promotion and protection

5.5.1 Lifestyle and health promotion

Promotion of lifestyles that will improve personal health, and development of community health services that are readily accessible to all Canadians are major emphases of the national health and welfare department. Major areas of health promotion involve consideration of non-medical use of drugs including alcohol and tobacco, nutrition education, family planning and general approaches to lifestyles related to health.

Federal and provincial governments co-operate on a national alcohol information program, which uses television, radio, outdoor and bus advertising. Agencies of the two levels of government have worked together closely on reviews of alcohol problems and standards for alcohol advertising.

A long-range plan for developing information on smoking and health has been carried on in co-operation with a Canadian council on smoking and health. This led to development of information packages for expectant parents.

There are many other instances of collaboration between government agencies and non-government organizations concerned with health promotion. For example, a national resource kit, *Women and addictions: alcohol and minor tranquilizers*, developed through a contribution under the alcohol, tobacco and drug resource fund, has been produced by an Ontario caucus on women, alcohol and drugs.

In addition to producing health promotion materials, efforts have been made to reach people at all levels in the community. Through trainer workshops, addictions workers have improved their basic knowledge and skills. The national health and welfare department has developed a basic training system in alcohol and drug services.

A number of television programs and public service announcements on nutrition, health and fitness have been produced and shown. Some of the most widely used government publications on nutrition are: *Canada's food guide* and handbooks, *Nutrient values of some common foods* and *Shopping for food and nutrition*.

Plans for future directions in health promotion include emphasis on programming in self-care and stress.

5.5.2 Health protection

Health protection services of the federal health and welfare department cover food, drugs, environmental health and disease control.

Food. Standards of safety and purity are developed through laboratory research and maintained by means of regular and widespread inspection of food-manufacturing establishments. Changing food technology requires the development of methods of laboratory analysis to ensure the safety of new types of ingredients and packaging materials. Food and drug regulations list chemical additives that may be used in foods, the amounts that may be added and the underlying reason. Information on new additives must be reviewed before they are included in the permitted list. Emphasis is placed on studies to ensure that the levels of pesticide residues in foods are not a health hazard. The effect of new packaging and processing techniques on the bacteria associated with food spoilage is also of special concern. A national reporting system for food-borne outbreaks of disease has been established.

Drugs. Activities are focused on the principle that Canadians should have access to drugs that are both safe and effective. A major part of the activity is devoted to clearing new drugs for marketing and maintaining post-marketing surveillance. For example, manufacturers of new drugs with unknown properties are required by law to submit extensive evidence of the safety and effectiveness of their products, including information about therapeutic properties and side effects. Continued surveillance of the new product is maintained. The national health and welfare department monitors manufacturers' compliance with official specifications and regulations setting standards for manufacturing facilities and quality control of drugs. Products such as serums and vaccines are subject to special licensing requirements. Information is provided to

provincial governments relating to manufacturers' facilities and their compliance with standards for their products.

Environmental health. Environmental health responsibilities include the study of adverse effects on human health of the chemical and physical environment, and ensuring the safety, effectiveness, and non-fraudulent nature of medical devices. Health hazard assessments are developed for work and home environments, household products, and air and water criteria. Research on radiation hazards is conducted and environmental and occupational exposures are monitored. The health and welfare department enforces the Radiation Emitting Devices Act and that portion of the Food and Drugs Act dealing with medical devices and radioactive pharmaceuticals, and administers the Hazardous Products Act jointly with the consumer and corporate affairs department. The Environmental Contaminants Act provides for the collection of data and investigation of substances that may be a danger to human health or the environment and, when necessary, recommendation of restricted or prohibited use of substances.

Disease control. A laboratory centre is involved in developing improved diagnostic procedures and other measures to combat communicable disease agents. Methods are developed for detecting and preventing disease, and producing and distributing standardized diagnostic reagents to federal, provincial and other health organizations. A national reference service is provided to identify disease-producing bacteria, viruses and parasites, and a co-operative federal-provincial program assures laboratory quality and proficiency testing. Surveillance of birth defects, poisonings and adverse drug reactions is maintained. Epidemiological research is carried out on communicable and non-communicable diseases.

Fitness and amateur sport

5.5.3

Projects are designed to promote an awareness of physical fitness and provide Canadians with information on fitness programs. Major areas of interest have been fitness and health, employee fitness, fitness trails and the development of the Canadian home fitness test. An exercise break program has been developed to help fitness leaders and health professionals introduce the benefits of physical activity in business, industry and educational institutions.

The Canada fitness award program was developed to encourage boys and girls, aged 7 to 17, to strive for fitness and excellence. The program awards bronze, silver and gold crests and awards of excellence on the basis of test results. This popular test is widely used by schools and youth organizations.

One of the more visible programs is a sports demonstration project. This project tours Canada each summer and gives residents the opportunity to try a variety of physical skills, such as skiing on artificial snow, skating on a specially-designed plastic surface or batting balls pitched from an automatic pitching machine.

Additional details on fitness and sport programs are included in Chapter 17, Cultural activities and leisure.

Research and planning

5.6

Medical Research Council. Most federal grants supporting health science research in universities and hospitals are channelled through a medical research council which reports to Parliament through the minister of national health and welfare. The council provides grants in aid of operating and equipment requirements for research projects and direct support for a limited number of investigators and research trainees. It offers incentives for the development of research in highly productive fields where major contributions may be expected and in fields or regions where research is not adequately developed. Support is given for meetings, international scientific activities and exchange of scientists.

Health research and development. The NHW department obtains information and evaluates and develops options for the achievement of the promotion, protection,

maintenance and restoration of the health of Canadians, through its research and development program.

The program encourages the development of ideas and proposals generated by qualified individuals and agencies (other than federal government departments and employees); and the maintenance of a body of competent Canadian research investigators in health care, including health hazards of the environment, the biology of human populations, lifestyle and the organization of health services.

Health statistics. The health division of Statistics Canada has established collection systems for data on vital statistics, special diseases, health manpower and hospital and institutional care. Units in the national health and welfare department are concerned with data on health products, health hazards and certain disease areas. The department also operates a medical care data bank, and integrates health statistical data from various sources. Socio-economic research is carried out in a variety of fields, including medical and hospital care, community health, health expenditures and resources and other matters relating to health costs and utilization. These studies support departmental health planning as well as the production of publications to increase public understanding of Canada's health services and resources.

Health planning. The national health and welfare department assesses the orientation of health services and the organization of resources and factors influencing the health of Canadians. Proposals are developed by specialists in medicine, pharmacy, epidemiology, economics, sociology, demography, political science, statistics and administration.

Standards and consultation. The NHW department extends technical advisory services to provincial agencies, universities and other organizations for health programs, health manpower and health research.

The department co-operates with provinces, professional associations, universities and other organizations to establish and promote standards and directives for health services, clinical practice and health personnel. Health consultants study the health-related needs of Canadians, the means available to meet those needs, and the use of health resources. They provide information and consulting services particularly about health systems, plans and tenders for facilities, hospital administration, health personnel, community health and health promotion. Other technical advice is available through programs directly operated by the department for health protection including the safety of foods, drugs, and health appliances, environmental health, disease control and other specialized areas.

Canada health survey. The Canada health survey was a joint responsibility of the national health and welfare department and Statistics Canada. It was developed to obtain better data on the health status and risk exposure of the Canadian population and to complement existing information which comes primarily from vital statistics and medical care records. It monitored not just disease and disability but relevant facts on lifestyle, environment and socio-economic factors. Information came from an interview and questionnaire. Observed information came from physical measurements and blood tests. The project, initially planned as a continuing survey, was reduced to a one-year study conducted from May 1978 to April 1979. Approximately 12,000 homes (38,000 individuals) were visited. One-third of the households participated in the physical measures portion of the survey.

5.7 Mental health and illness

Among provincially operated health services, mental health activities are one of the largest administrative areas in expenditure and employees.

No adequate measure of mental disorders exists, but in 1977 there were 129,397 admissions to psychiatric in-patient facilities. Separations numbered 131,650, and the year-end census of patients on books totalled 48,238. There has been a gradual decline in all of these indicators in recent years. Table 5.20 contains information on patient movement in the various types of psychiatric facilities. Beyond these hospitals and clinics, however, are many other cases.

In 1977, 234 separate in-patient facilities and 148 psychiatric units in hospitals were caring for the mentally ill; most separate facilities are operated by the provinces. The majority of patients reside in the 42 public mental hospitals. Most mental hospitals have undergone successive additions to their original structures and many have pioneered new treatments for mental illness. Several provinces are arranging for boarding-home care with the federal government sharing the cost of maintaining needy patients in such homes under the Canada Assistance Plan. However, in each province most of the revenue of reporting mental institutions was provided by the provincial government or the provincial insurance plan.

Community mental health facilities are being extended beyond mental institutions to provide greater continuity of care, deal with incipient breakdown, and rehabilitate patients in the community. Psychiatric units in general hospitals contribute by integrating psychiatry with other medical care and making it available to patients in their own community. In 1977 the psychiatric units in hospitals admitted 54% of the total admissions to all kinds of mental institutions. In-patient services in psychiatric units are covered under all provincial hospital insurance plans. Some provinces have small regional psychiatric hospitals to facilitate patient access to treatment and the complete integration of medical services. Day-care centres, allowing patients to be in hospital during the day and at home at night, have been organized across the country. Community mental health clinics, some provincially operated, others municipally, and psychiatric out-patient services are open in all provinces.

Specialized rehabilitation services assist former patients to function more adequately and are operated by mental hospitals and community agencies. They include sheltered workshops that pay for work and provide training, and halfway houses in which patients can live and continue to receive treatment while adjusting to a job.

Facilities for mentally retarded persons include day training schools or classes, summer camps and sheltered workshops as well as residential care in institutions. These facilities provide for social, academic and vocational training. Manual skills are taught in the training-school workshops and some people are placed in jobs in the community.

Emotionally disturbed children presenting personality or behaviour disorders are treated at hospital units, community clinics, child guidance clinics and other out-patient facilities.

The mental health problems related to heavy alcohol use stem from brain damage due to toxic effects of alcohol, from associated nutritional deficiencies and from related emotional difficulties. Of equal concern is the wide range of physical health problems often leading to death, and social problems resulting from excessive use of alcohol.

Although it is difficult to define alcoholism and to estimate its prevalence, epidemiologists have suggested a strong relationship between overall patterns of alcohol consumption and alcohol-related problems. Problems related to alcohol use are treated in hospitals, out-patient clinics, hostels, long-term residences or farms, and special facilities for the alcoholic offender. In each province, official and voluntary agencies carry out public education, treatment, rehabilitation and research.

Public health, rehabilitation and home care

5.8

Provincial and local structure. Provincial health departments, in co-operation with the regional and local health authorities, administer such services as environmental sanitation, communicable disease control, maternal and child health, school health, nutrition, dental health, occupational health, public health laboratories and vital statistics. Most provinces have delegated certain health responsibilities to health units in rural regions and to municipal health departments in urban centres. Several provinces also provide services directly to their thinly populated northern areas. Certain regulatory and preventive services, including case-findings, screening, diagnosis and referral, health education, personal health care, and supervision in certain areas of treatment services conducted through clinics and home visits, have continued to be the responsibility of local health authorities.

As metropolitan areas and population densities have increased, effective administration has required a broader geographical base. Some smaller local health

services are provided or supervised by a regional health unit. A regional structure intermediate between provincial departments and local health units may provide technical advice. Some urban boards of health in metropolitan areas have been amalgamated to increase their effectiveness.

Maternal and child health. All provincial health departments have established maternal and child health consultant services that co-operate with the public health nursing services. The maternal and child health services also undertake studies in maternal and child care, including hospital care, and help train nursing personnel. At the local level, public health nurses provide preventive services to mothers, the newborn and children through clinics, home and hospital visits and school health services.

Nutrition and health education. Provincial health departments and some municipal or regional health departments employ nutrition consultants to extend technical guidance and education to health and welfare agencies, schools, nursing homes, various community service agencies and other institutions and hospitals. They also provide diet counselling to selected patient groups such as diabetics, and conduct nutritional surveys and other research. Most provincial health departments have a division or unit of health

Health education programs are directed to good nutrition, accident prevention, and to changing habits harmful to health such as smoking and excessive use of alcohol and other drugs.

education under a full-time professional health educator to promote public knowledge of health needs and measures. These divisions provide educational materials to other divisions of the health department, local health authorities, schools, voluntary associations and the public. Many educational activities are directed to accident prevention and to changing habits harmful to health, such as smoking and the excessive use of alcohol and other drugs. All health workers carry out health education as part of their normal activities.

Dental health. Although public health programs at the provincial level have been largely preventive, increasing emphasis is now being given to dental treatment services. Dental clinics conducted by local health services are generally restricted to pre-school and younger school-age groups. A number of provinces send dental teams to remote areas lacking such services. All provinces have dental care schemes of varying coverage for welfare recipients. Other dental health programs are directed to the training of dentists, dental hygienists, dental nurses, dental therapists and dental assistants, the conducting of dental surveys and extension of water fluoridation.

Communicable disease control. The larger provincial health departments have separate divisions of communicable disease control headed by full-time epidemiologists; in others this function is combined with one or more community health services. Local health authorities organize public clinics for immunization against diphtheria, tetanus, poliomyelitis, whooping cough, smallpox and measles. They also engage in case-finding and diagnostic services in co-operation with public health laboratories and private physicians. Special services for tuberculosis and venereal disease have already been described.

Public health laboratories. All provinces maintain a central public health laboratory and most have branch laboratories to assist local health agencies and the medical profession in the protection of community health and the control of infectious diseases. Public health bacteriology (testing of milk, water and food), diagnostic bacteriology and pathology are the principal functions of the laboratory service, with medical testing for physicians and hospitals steadily increasing.

Rehabilitation and home care. Rehabilitation services are provided by a wide range of public and voluntary agencies. Physical medicine and rehabilitation services are based in

several types of institution, including hospitals, separate in-patient facilities, worker compensation board centres, and out-patient centres for children. Financing is from various federal, provincial and voluntary agency sources. Every province includes some institution-based services under hospital and medical care insurance. Two provinces have recently extended this coverage to include the supply and fitting of certain prosthetic and corrective devices. Vocational rehabilitation for the disabled is also a joint federal-provincial activity.

Two events highlight recent Canadian and international developments in rehabilitation. The national health and welfare department provided financial support and co-operation to the Canadian Rehabilitation Council for the Disabled for the 1980 World Congress of Rehabilitation International in Winnipeg and 1981 was designated the International Year for Disabled Persons.

Home care in Canada has developed in a variety of ways. Provincial home care programs characterize the numerous approaches and organizational structures that exist in Canada today. Some programs are oriented to specific disease categories; some are attached to specific hospitals or community centres, while others are seen as integral parts of comprehensive health care delivery systems. The range of services delivered by the home care programs varies from nursing services alone to a complete array of health and social services. Some programs concentrate on patients requiring short-term active treatment, while others treat convalescent or chronic patients. Some have as specific objectives the reduction of institutional costs and length of stay, and others aim for continuity of care and provision of co-ordinated health care services to patients for whom home care is the most appropriate level of care.

Most home care programs have two features: centralized control of services, and co-ordinated services to meet the changing needs of the patient. In some provinces the departments of health play an active role in financing and administration of home care programs, while in others local agencies, municipalities and hospitals assume major responsibility for home care.

Special schools or classes for various groups of handicapped children are usually operated by school boards, whereas most schools for the deaf and for the blind are residential schools operated by provincial governments.

Special programs for welfare recipients. All provinces pay all or part of the cost of additional services required by residents in financial need under their social assistance programs. These costs are shared equally with the federal government under the Canada Assistance Plan Act. The range of benefits varies from province to province, but may include such services as eyeglasses, prosthetic appliances, dental services, prescribed drugs, home care services, and nursing home care. Usually, if the benefit is universally available to insured residents under another program, this portion would not be administered under welfare auspices. Details of such programs are included in Chapter 8, Social security.

Health personnel

5.9

In terms of function, numbers and visibility, nurses and physicians may be seen as particularly significant categories of health personnel. However, because of increasing complexity of health care and a growing concern of efficiency in health services, other occupations have multiplied in number, size and importance in recent years. Tables 5.21, 5.22 and 5.23 present selected information on health personnel in Canada. Table 5.21 includes figures for interns and residents and those involved in administration, teaching, and research, as well as those in the clinical practice of medicine.

As of December 1977, there were 41,398 active civilian physicians in Canada. More important than the total number of physicians is the population/physician ratio. There is a greater concentration of the most highly qualified health personnel in urbanized areas. In 1977, the population/physician ratio ranged from 538 residents per physician in Ontario to 1,294 in the Northwest Territories. Nationally, this ratio has improved each year since 1966, reaching a level of 566 persons per active physician in 1977. This

improvement has been particularly noteworthy in some of the less heavily populated provinces.

In the ratio of population to nearly 138,000 registered nurses, there was a range from 147 residents per RN working in Ontario, Manitoba and Nova Scotia to 234 in Yukon. These figures indicate that even the sparsely populated areas of Canada have good access to nursing personnel (Table 5.22).

The scope of health occupations in Canada is illustrated by Table 5.23. In addition to physicians and registered nurses, there were nearly 158,000 persons listed in other health occupations. The importance of a wide range of professional, semi-professional and support occupations is reflected in the number of groups which have formed national associations. Provincial authorities have established registration and regulatory bodies for a number of health occupations.

5.10 International health services

Through the national health and welfare department, Canada participates in the activities of the Commonwealth ministers of health, the Pan-American Health Organization, the World Health Organization, other United Nations specialized agencies and other intergovernmental organizations whose programs have a substantial health component. Similarly the department takes part in bilateral exchanges with countries that have scientific, technological or cultural arrangements with Canada.

In addition, each year Canadian experts in public health and in the health sciences undertake specific assignments abroad as special advisers or consultants at the request of the World Health Organization, the Pan-American Health Organization or one of the other agencies.

The department enforces regulations governing the handling and shipping of shellfish under an international shellfish agreement between Canada and the United States. Other responsibilities include the custody and distribution of biological, vitamin and hormone standards for the World Health Organization and certain duties in connection with an international convention on narcotic drugs.

Sources

- 5.1 - 5.10 (except 5.4.2) Branch and Interagency Co-ordination Unit, Health Services and Promotion Branch, Department of National Health and Welfare; Health Division, Social Statistics Field, Statistics Canada.
- 5.4.2 Policy, Planning and Information Branch, Information Systems Directorate, Department of National Health and Welfare.

Tables

not available	e estimate
not appropriate or not applicable	p preliminary
— nil or zero	r revised
-- too small to be expressed	certain tables may not add due to rounding

5.1 General and allied special hospital separations, days per 100,000 population, and average days of stay, by diagnostic category, 1976¹

Diagnostic category ²	Separations	Separations per 100,000 population	Days per 100,000 population	Average days of stay
Infective and parasitic diseases	99,839	435	3,699	8.5
Neoplasms	223,376	973	15,190	15.6
Endocrine, nutritional and metabolic diseases	68,865	300	4,742	15.8
Diseases of the blood and blood-forming organs	24,088	105	1,135	10.8
Mental disorders	147,254	641	11,859	18.5
Diseases of the nervous system and sense organs	157,335	685	11,125	16.2
Diseases of the circulatory system	379,615	1,654	38,003	23.0
Diseases of the respiratory system	426,101	1,856	13,681	7.4
Diseases of the digestive system	395,725	1,724	15,353	8.9
Diseases of the genito-urinary system	336,273	1,465	9,711	6.6
Complications of pregnancy, childbirth and the puerperium	501,838	2,186	11,001	5.0
Diseases of the skin and subcutaneous tissue	59,369	259	2,330	9.0
Diseases of the musculoskeletal system and connective tissue	164,859	718	9,674	13.5
Congenital anomalies	41,480	181	1,743	9.6
Symptoms and ill-defined conditions	166,566	726	4,772	6.6
Accidents, poisoning and violence (nature of injury)	339,833	1,480	15,628	10.6
Supplementary classifications	90,724	395	2,941	7.4
All causes	3,623,140	15,783	172,586	10.9

¹Excludes newborn and data for Yukon and Northwest Territories.
²Major groupings of the International Classification of Diseases, Adapted — 8th Revision. More detailed information is available in Statistics Canada publication *Hospital morbidity* (Catalogue 82-206) and *Hospital morbidity — Canadian diagnostic list* (Catalogue 82-209).

5.2 Hospital separations per 100,000 population by diagnostic category, sex and age group, 1976¹

Diagnostic category ²		Under 15	15-24	25-44	45-64	65+	Total
Infective and parasitic diseases	M	30,781	4,985	5,458	4,418	3,910	49,552
	F	25,767	6,755	6,617	5,487	5,661	50,287
	T	56,548	11,740	12,075	9,905	9,571	99,839
Neoplasms	M	3,903	3,804	8,353	31,809	42,486	90,355
	F	3,402	8,456	35,226	52,161	33,776	133,021
	T	7,305	12,260	43,579	83,970	76,262	223,376
Endocrine, nutritional, and metabolic diseases	M	5,355	2,050	4,264	8,536	7,625	27,830
	F	5,043	3,627	7,735	12,045	12,585	41,035
	T	10,398	5,677	11,999	20,581	20,210	68,865
Diseases of the blood and blood-forming organs	M	4,925	1,158	886	1,421	2,631	11,021
	F	4,001	1,461	1,616	2,135	3,854	13,067
	T	8,926	2,619	2,502	3,556	6,485	24,088
Mental disorders	M	3,095	9,369	24,952	22,647	7,440	67,503
	F	2,680	13,156	31,122	23,054	9,739	79,751
	T	5,775	22,525	56,074	45,701	17,179	147,254
Diseases of the nervous system and sense organs	M	24,802	6,526	12,241	17,172	15,965	76,706
	F	19,303	6,856	14,162	18,526	21,782	80,629
	T	44,105	13,382	26,403	35,698	37,747	157,335
Diseases of the circulatory system	M	1,481	3,095	22,357	87,455	93,395	207,783
	F	1,126	3,325	20,662	53,446	93,273	171,832
	T	2,607	6,420	43,019	140,901	186,668	379,615
Diseases of the respiratory system	M	127,351	18,487	21,450	28,582	38,246	234,116
	F	97,667	23,847	22,304	22,598	25,569	191,985
	T	225,018	42,334	43,754	51,180	63,815	426,101
Diseases of the digestive system	M	27,117	23,664	47,920	65,637	38,501	202,839
	F	17,008	31,324	51,939	55,070	37,545	192,886
	T	44,125	54,988	99,859	120,707	76,046	395,725
Diseases of the genito-urinary system	M	14,385	8,925	22,328	35,209	34,035	114,882
	F	11,453	33,434	95,405	63,270	17,829	221,391
	T	25,838	42,359	117,733	98,479	51,864	336,273
Complications of pregnancy, childbirth and the puerperium	F	1,108	233,995	266,026	709	—	501,838
Diseases of the skin and subcutaneous tissue	M	7,945	6,148	7,289	5,181	3,076	29,639
	F	6,785	6,917	6,413	5,576	4,039	29,730
	T	14,730	13,065	13,702	10,757	7,115	59,369
Diseases of the musculoskeletal system and connective tissue	M	5,429	11,356	26,556	26,342	10,798	80,481
	F	5,020	10,552	20,493	29,092	19,221	84,378
	T	10,449	21,908	47,049	55,434	30,019	164,859
Congenital anomalies	M	15,927	2,526	2,091	1,361	481	22,386
	F	10,183	3,403	3,301	1,646	561	19,094
	T	26,110	5,929	5,392	3,007	1,042	41,480
Symptoms and ill-defined conditions	M	18,584	7,518	16,808	22,457	14,328	79,695
	F	16,012	14,240	22,220	20,603	13,796	86,871
	T	34,596	21,758	39,028	43,060	28,124	166,566

5.2 Hospital separations per 100,000 population by diagnostic category, sex and age group, 1976¹
(concluded)

Diagnostic category ²		Under 15	15-24	25-44	45-64	65+	Total
Accidents, poisonings, and violence (nature of injury)	M	43,248	55,019	50,991	33,438	19,032	201,728
	F	26,109	24,069	28,454	25,391	34,082	138,105
	T	69,357	79,088	79,445	58,829	53,114	339,833
Supplementary classifications	M	1,989	2,144	4,041	3,876	3,641	15,691
	F	1,769	7,361	56,619	5,073	4,211	75,033
	T	3,758	9,505	60,660	8,949	7,852	90,724
All causes	M	336,317	166,774	277,985	395,541	335,590	1,512,207
	F	254,436	432,778	690,314	395,882	337,523	2,110,933
	T	590,753	599,552	968,299	791,423	673,113	3,623,140

¹Excludes newborn and data for Yukon and Northwest Territories.
²See footnote 2 to Table 5.1.

5.3 Separated cases and operations in general and allied special hospitals, by age group, 1976¹

Item		Under 15	15-24	25-44	45-64	65+	Total
All separated cases							
Cases	No.	590,753	599,552	968,299	791,423	673,113	3,623,140
Days in hospital	"	3,366,116	3,491,141	6,756,642	9,487,531	16,517,870	39,619,300
Av. days per case	"	5.7	5.9	7.0	12.0	24.6	10.9
Separated cases undergoing surgery							
Cases (primary operations)	No.	229,465	359,840	623,032	418,358	246,098	1,876,793
Days in hospital	"	1,139,820	2,008,138	3,959,569	4,356,851	4,361,431	15,825,809
Av. days per case	"	5.0	5.6	6.4	10.5	17.7	8.4
Rate per 100,000 population							
All separated cases		10,041	13,373	15,622	18,027	33,637	15,783
All operated cases		3,900	8,026	10,052	9,529	12,298	8,176
Days of all separated cases		57,215	77,870	109,006	216,107	825,440	172,586
Days of all operated cases		19,374	15,469	63,881	99,240	177,952	68,939
Population ²		5,883,300	4,483,300	6,198,400	4,390,200	2,001,100	22,956,300

¹Excludes newborn and data for Yukon and Northwest Territories.
²Estimate of Aug. 1, 1976.

5.4 Primary operations in general and allied special hospitals, by age group and by sex, 1976¹

Operation		Under 15	15-24	25-44	45-64	65+	Total
Neurosurgery	M	1,547	1,428	3,332	4,398	1,979	12,684
	F	1,052	863	2,784	4,176	1,809	10,684
Ophthalmology	M	6,145	2,217	3,239	6,768	9,438	27,807
	F	5,295	1,758	2,604	6,818	14,303	30,778
Otorhinolaryngology	M	48,870	15,624	15,971	8,475	2,466	91,406
	F	44,109	18,058	13,451	6,595	1,780	83,993
Thyroid, parathyroid and adrenals	M	281	188	428	442	113	1,452
	F	246	562	1,719	1,840	482	4,849
Vascular and cardiac surgery	M	1,798	1,090	4,891	16,106	7,858	31,743
	F	1,612	1,031	7,538	11,199	5,140	26,520
Thoracic surgery	M	562	818	1,196	2,686	1,959	7,221
	F	337	362	752	1,543	1,192	4,186
Abdominal surgery	M	19,019	13,365	24,950	38,864	23,186	119,384
	F	9,080	16,123	31,914	33,988	18,856	109,961
Proctological surgery	M	675	3,725	9,701	7,081	2,539	23,721
	F	458	4,044	6,588	5,252	2,358	18,700
Urological surgery	M	14,903	5,344	10,966	19,477	29,491	80,181
	F	2,653	1,600	5,393	6,993	4,670	21,309
Breast surgery	M	87	244	178	288	206	1,003
	F	108	2,036	7,521	8,760	3,494	21,919
Gynecological surgery	M	635	31,913	159,550	58,542	9,907	260,547
	F	767	136,645	157,177	462	—	295,051
Orthopedic surgery	M	16,604	29,332	36,171	26,757	11,061	119,925
	F	12,100	14,329	19,442	26,086	22,002	93,959
Plastic surgery	M	7,377	8,339	8,268	6,888	3,373	34,045
	F	5,905	6,854	9,211	6,878	3,834	32,682
Oral and maxillofacial surgery	M	1,284	2,439	2,408	1,371	559	8,061
	F	904	1,346	1,515	1,137	558	5,460
Dental surgery	M	2,586	5,589	4,909	3,038	885	17,007
	F	2,798	8,470	4,978	2,634	814	19,694

5.4 Primary operations in general and allied special hospitals, by age group and by sex, 1976¹ (concluded)

Operation		Under 15	15-24	25-44	45-64	65+	Total
Biopsy	M	818	780	2,271	5,490	4,910	14,269
	F	586	1,583	5,283	6,661	3,958	18,071
Diagnostic endoscopy	M	3,321	2,390	7,279	14,272	12,984	40,246
	F	3,360	4,661	10,609	10,100	8,174	36,904
Diagnostic radiography	M	2,050	2,118	6,755	11,712	6,646	29,281
	F	2,061	3,069	6,722	8,360	5,434	25,646
Radiotherapy and related therapies	M	190	329	562	1,299	927	3,307
	F	136	181	950	2,780	1,386	5,433
Physical medicine and rehabilitation	M	1,874	1,054	1,729	2,855	3,381	10,893
	F	1,349	799	1,616	2,815	4,481	11,060
Other non-surgical procedures	M	1,837	3,541	11,234	15,199	4,299	36,110
	F	2,010	3,548	9,204	11,369	3,166	29,297
Other surgical and non-surgical procedures	M	19	16	31	63	20	149
	F	57	35	42	41	20	195
All operations	M	131,847	99,970	156,469	193,329	128,280	709,895
	F	97,618	259,870	466,563	225,029	117,818	1,166,898
	T	229,465	359,840	623,032	418,358	246,098	1,876,793

¹Excludes newborn and data for Yukon and Northwest Territories.

5.5 Malignant neoplasms and rate per 100,000 population, 1976

Province or territory of residence	Number of cases			Rate per 100,000 population		
	New primary sites	Deaths ¹	Hospital morbidity separations	New primary sites	Deaths	Hospital morbidity separations
Newfoundland	1,322	633	2,339	237	114	419
Prince Edward Island ^a	428	174	832	362	147	692
Nova Scotia	2,254	1,410	6,214	272	170	750
New Brunswick ^a	2,187	986	3,653	323	146	541
Quebec	14,534	9,481	27,062	233	152	434
Ontario	..	12,657	52,978	..	153	641
Manitoba	3,796	1,803	6,494	372	177	636
Saskatchewan	3,307	1,459	5,769	359	158	608
Alberta	5,091	2,259	9,764	277	123	531
British Columbia	9,710	3,916	16,241	394	159	658
Yukon	19	25	..	87	115	..
Northwest Territories	84	29	..	197	68	..
Canada	42,732 ^a	34,832	131,346	290 ^a	152	572

¹Includes only the deaths where underlying cause was stated to be due to malignant neoplasms.

^a1977 data.

^a1975 data.

^aExcludes Ontario.

5.6 Malignant neoplasms by A List Diagnosis and rate per 100,000 population, 1976

A List Diagnosis	Cases ¹	Rate per 100,000 population ¹	Deaths	Rate per 100,000 population	Hospital separations ²	Rate per 100,000 population ²
A45 Malignant neoplasm of buccal cavity and pharynx	1,329	9.1	654	2.8	3,531	15.4
A46 Malignant neoplasm of esophagus	374	2.6	597	2.6	1,590	6.9
A47 Malignant neoplasm of stomach	1,656	11.3	2,360	10.3	5,332	23.2
A48 Malignant neoplasm of intestine except rectum	3,448	23.5	3,889	16.9	11,415	49.7
A49 Malignant neoplasm of rectum and rectosigmoid junction	1,830	12.5	1,370	6.0	5,648	24.6
A50 Malignant neoplasm of larynx	519	3.5	334	1.5	1,996	8.7
A51 Malignant neoplasm of trachea, bronchus and lung	4,501	30.7	7,138	31.0	17,600	76.7
A52 Malignant neoplasm of bone	110	0.8	164	0.7	1,997	8.7
A53 Malignant neoplasm of skin	8,269	56.4	363	1.6	4,266	18.6
A54 Malignant neoplasm of breast	5,027	34.3	3,174	13.8	17,555	76.5
A55 Malignant neoplasm of cervix uteri ³	847	11.5	459	4.0	4,749	41.2
A56 Other malignant neoplasm of uterus ³	1,441	19.6	463	4.0	4,766	41.3
A57 Malignant neoplasm of prostate ⁴	2,873	39.3	1,788	15.6	9,867	86.3
A58 Malignant neoplasm of other and unspecified sites	8,067	55.0	8,845	38.5	41,034	178.7
A59 Leukemia	780	5.3	1,350	5.9	7,000	30.5
A60 Other neoplasms of lymphatic and haematopoietic tissue	1,558	10.6	1,884	8.2	11,807	51.4
Total	42,629	290.7	34,832	151.5	150,153	654.1

¹Excludes Ontario, Yukon and Northwest Territories.

²Excludes Yukon and Northwest Territories.

³Females only.

⁴Males only.

5.7 Total therapeutic abortions¹ and abortion rate per 100 live births, by province, 1975-77

Province or territory	Number of therapeutic abortions			Rate per 100 live births		
	1975	1976	1977	1975	1976 ²	1977 ²
Newfoundland	176	418	493	1.6	3.8	4.4
Prince Edward Island	77	57	43	4.0	2.9	2.3
Nova Scotia	1,017	1,247	1,304	7.8	9.7	10.3
New Brunswick	379	400	426	3.2	3.4	3.5
Quebec	5,579	7,249	7,583	6.0	7.5	8.0
Ontario	24,921	26,768	27,782	19.8	21.8	22.5
Manitoba	1,298	1,393	1,573	7.6	8.3	9.2
Saskatchewan	1,282	1,128	1,235	8.4	7.1	7.9
Alberta	4,333	4,943	5,642	13.7	15.0	17.4
British Columbia	10,076	10,704	11,271	27.8	29.9	30.0
Yukon	77	79	106	18.9	17.6	24.7
Northwest Territories	95	90	102	8.1	7.6	10.1
Residence not reported	1	2	4	--	--	--
Canada	49,311	54,478	57,564	13.8	15.1	16.0

¹In addition 79 abortions were performed on non-residents in 1975, 58 in 1976 and 56 in 1977.²Rates are based on estimated live births.**5.8 Summary of renal failure patients in Canada, years ended Dec. 31, 1975 and 1976**

Status of patients	Number of cases	
	1975	1976
New patients entering program during year	690	722
On dialysis at December 31	1,488	1,752
Died during year	290	275
Received transplant during year	294	341
Alive with functioning transplant	512	1,033
Status unknown at Dec. 31	...	90

5.9 Number and bed capacity of operating public, proprietary and federal hospitals as at Jan. 1, 1976-78

Type	1976		1977		1978	
	Hospitals	Beds	Hospitals	Beds	Hospitals	Beds
General	923	127,884	888	125,922	885	126,982
Allied special	347	32,480	371	39,289	374	41,880
Mental	127	36,652	126	35,969	56	15,793
Tuberculosis	7	418	4	233	—	—
Total	1,404	197,434	1,389	201,413	1,315	184,655

5.10 Number and bed capacity of operating public, proprietary and federal hospitals, by province and type, as at Jan. 1, 1978

Province or territory and category	Type of hospital			Allied special		
	Hospitals	Beds	Beds per 1,000 population ¹	Hospitals	Beds	Beds per 1,000 population ¹
Newfoundland						
Public	34	2,855	5.0	13	507	0.9
Proprietary	—	—	—	—	—	—
Federal	—	—	—	—	—	—
Prince Edward Island						
Public	8	658	5.4	2	58	0.5
Proprietary	—	—	—	—	—	—
Federal	—	—	—	1	14	0.1
Nova Scotia						
Public	43	4,569	5.4	4	528	0.6
Proprietary	—	—	—	—	—	—
Federal	4	529	0.6	—	—	—
New Brunswick						
Public	34	4,393	6.3	1	20	--
Proprietary	—	—	—	—	—	—
Federal	1	10	--	—	—	—
Quebec						
Public	126	27,651	4.4	65	20,300	3.2
Proprietary	1	183	--	37	2,340	0.4
Federal	1	60	--	10	1,193	0.2

5.10 Number and bed capacity of operating public, proprietary and federal hospitals, by province and type, as at Jan. 1, 1978 (continued)

Province or territory and category	Type of hospital					
	General			Allied special		
	Hospitals	Beds	Beds per 1,000 population ¹	Hospitals	Beds	Beds per 1,000 population ¹
Ontario						
Public	190	44,764	5.3			
Proprietary	2	70	--	43	7,317	0.9
Federal	3	513	0.1	38	744	0.1
Manitoba				14	133	--
Public	77	5,885	5.7			
Proprietary	—	—	—	3	434	0.4
Federal	3	603	0.6	20	105	0.1
Saskatchewan						
Public	132	6,819	7.2	7	1,231	1.3
Proprietary	—	—	—	—	—	—
Federal	2	104	0.1	2	14	--
Alberta						
Public	116	10,822	5.5	31	3,422	1.8
Proprietary	—	—	—	—	—	—
Federal	4	843	0.4	6	34	--
British Columbia						
Public	93	15,223	6.0	28	3,241	1.3
Proprietary	2	16	--	—	—	—
Federal	—	—	—	5	63	--
Yukon						
Proprietary	—	—	—	1	4	0.2
Federal	3	147	7.0	3	12	0.6
Northwest Territories						
Public	3	162	3.8	—	—	—
Proprietary	—	—	—	—	—	—
Federal	3	103	2.4	40	166	3.9
Canada						
Public	856	123,801	5.3	197	37,058	1.6
Proprietary	5	269	--	76	3,088	0.1
Federal	24	2,912	0.1	101	1,734	0.1
	Mental			Total, all hospitals		
	Hospitals	Beds	Beds per 1,000 population ¹	Hospitals	Beds	Beds per 1,000 population ¹
Newfoundland						
Public	1	284	0.5			
Proprietary	—	—	—	48	3,646	6.4
Federal	—	—	—	—	—	—
Prince Edward Island						
Public	1	258	2.1	11	974	8.0
Proprietary	—	—	—	—	—	—
Federal	—	—	—	1	14	0.1
Nova Scotia						
Public	4	759	0.9	51	5,856	6.9
Proprietary	—	—	—	—	—	—
Federal	—	—	—	4	529	0.6
New Brunswick						
Public	2	1,200	1.7	37	5,613	8.1
Proprietary	—	—	—	—	—	—
Federal	—	—	—	1	10	--
Quebec						
Public	7	1,556	0.2	198	49,507	7.9
Proprietary	—	—	—	38	2,523	0.4
Federal	—	—	—	11	1,253	0.2
Ontario						
Public	21	5,848	0.7	254	57,929	6.9
Proprietary	4	388	--	44	1,202	0.1
Federal	—	—	—	17	646	0.1
Manitoba						
Public	3	873	0.8	83	7,192	7.0
Proprietary	—	—	—	—	—	—
Federal	—	—	—	23	708	0.7
Saskatchewan						
Public	2	388	0.4	141	8,438	8.9
Proprietary	—	—	—	—	—	—
Federal	—	—	—	4	118	0.1
Alberta						
Public	3	1,326	0.7	150	15,570	8.0
Proprietary	—	—	—	—	—	—
Federal	—	—	—	10	877	0.4
British Columbia						
Public	8	2,913	1.1	129	21,377	8.4
Proprietary	—	—	—	2	16	--
Federal	—	—	—	5	63	--

5.10 Number and bed capacity of operating public, proprietary and federal hospitals, by province and type, as at Jan. 1, 1978 (concluded)

Province or territory and category	Type of hospital			Total, all hospitals		
	Mental Hospitals	Beds	Beds per 1,000 population ¹	Hospitals	Beds	Beds per 1,000 population ¹
Yukon	—	—	—	1	4	0.2
Proprietary	—	—	—	6	159	7.6
Federal	—	—	—	—	—	—
Northwest Territories	—	—	—	3	162	3.8
Public	—	—	—	—	—	—
Proprietary	—	—	—	43	269	6.3
Federal	—	—	—	—	—	—
Canada	52	15,405	0.6	1,105	176,264	7.5
Public	4	388	—	85	3,745	0.1
Proprietary	—	—	—	125	4,646	0.2
Federal	—	—	—	—	—	—

¹Based on estimated population as at June 1, 1978.

5.11 Movement of patients¹ and patient-days in reporting public, proprietary and federal hospitals, 1976 and 1977

Type of service and item	1976P	1977P	Type of service and item	1976P	1977P
PUBLIC HOSPITALS					
General			Av. daily no. of patients	191	4.8
Beds set up at Dec. 31			Per 1,000 population	—	—
Separations	3,428,491	3,412,142	Percentage occupancy ²	72.5	60.1
Per 1,000 population	149.1	146.7	Allied special		
Patient-days	32,993,944	34,378,100	Beds set up at Dec. 31		
Per 1,000 population	1,435.0	1,478.2	Separations	10,029	10,076
Av. daily no. of patients	90,147	94,187	Per 1,000 population	0.4	0.4
Per 1,000 population	3.9	4.0	Patient-days	641,282	1,011,144
Percentage occupancy ²	76.2	77.2	Per 1,000 population	27.9	43.5
Allied special			Av. daily no. of patients	1,752	2,770
Beds set up at Dec. 31			Per 1,000 population	0.1	0.1
Separations	185,398	179,079	Percentage occupancy ²	90.6	93.2
Per 1,000 population	8.1	7.7	Mental		
Patient-days	11,067,536	11,625,462	Beds set up at Dec. 31	499	—
Per 1,000 population	481.4	499.9	Admissions	—	—
Av. daily no. of patients	30,239	31,851	Per 1,000 population	—	—
Per 1,000 population	1.3	1.4	Patient-days	173,606	—
Percentage occupancy ²	89.9	89.1	Per 1,000 population	7.6	—
Mental			Av. daily no. of patients	474	—
Beds set up at Dec. 31	32,025	—	Per 1,000 population	—	—
Admissions	—	—	Percentage occupancy ²	94.3	—
Per 1,000 population	—	—			
Patient-days	10,872,526	—	FEDERAL HOSPITALS		
Per 1,000 population	472.9	—	General		
Av. daily no. of patients	29,706	—	Beds set up at Dec. 31		
Per 1,000 population	1.3	—	Separations	42,039	37,502
Percentage occupancy ²	90.9	—	Per 1,000 population	1.8	1.6
Tuberculosis			Patient-days	914,428	961,654
Beds set up at Dec. 31	—	—	Per 1,000 population	39.8	41.3
Admissions	—	—	Av. daily no. of patients	2,498	2,635
Per 1,000 population	—	—	Per 1,000 population	0.1	0.1
Patient-days	—	—	Percentage occupancy ²	62.6	66.0
Per 1,000 population	—	—	Allied special		
Percentage occupancy ²	—	—	Beds set up at Dec. 31	4,557	2,650
			Separations	0.2	0.1
PROPRIETARY HOSPITALS			Per 1,000 population	363,829	5,367
General			Patient-days	15.8	0.2
Beds set up at Dec. 31	—	—	Per 1,000 population	994	15
Separations	9,414	3,205	Av. daily no. of patients	—	—
Per 1,000 population	0.4	0.1	Per 1,000 population	—	—
Patient-days	69,773	17,562	Percentage occupancy ²	68.2	4.7
Per 1,000 population	3.0	0.8			

¹Patients refer to adults and children. All ratios are based on population estimates as at June 1 of the year concerned.

²Based on approved bed complement.

5.12 Average length of stay of adults and children in public general and allied special hospitals, by province, 1976 and 1977 (days)

Year and type of hospital	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	Canada ¹
1976P											
General											
Non-teaching with no long-term units											
1 - 24 beds	4.96	7.01	6.80	8.00	5.93	7.34	7.87	6.56	8.63	5.43	6.79
25 - 49 "	6.18	6.42	7.38	8.15	5.61	7.48	7.71	6.94	6.47	6.80	6.92
50 - 99 "	4.55	6.96	8.29	7.89	8.13	7.57	7.66	7.70	6.82	6.87	7.44
100 - 199 "	7.15	8.05	9.81	9.02	8.08	7.68	7.37	8.04	7.33	7.05	8.13
200+ "	8.15	—	8.96	8.68	9.02	7.84	9.75	11.22	7.34	7.43	8.30
Non-teaching with long-term units											
1 - 99 beds	12.81	—	—	—	11.48	9.46	8.57	6.77	7.33	8.11	9.26
100 - 199 "	—	6.56	8.76	—	9.97	8.98	9.23	12.33	—	10.67	9.49
200+ "	8.16	—	—	27.87	13.26	9.17	14.28	14.25	—	12.11	10.42
Total, non-teaching	6.92	7.36	8.81	9.04	9.66	8.63	8.87	7.63	6.97	10.30	8.77
Teaching, full											
1 - 499 beds	12.02	—	11.30	—	13.11	8.66	—	—	—	—	10.49
500+ "	—	—	13.44	—	12.01	9.78	12.17	13.16	9.24	10.08	10.57
Teaching, partial											
1 - 499 beds	10.18	—	—	20.04	9.52	17.04	—	10.88	—	9.39	10.54
500+ "	—	—	—	12.29	12.56	9.58	—	9.69	7.85	12.37	10.36
Total, general	8.20	7.36	9.86	10.68	10.50	8.95	9.87	9.06	7.98	10.28	9.41
Pediatric	9.27	—	8.06	—	6.41	6.64	—	—	9.44	6.19	7.01
Rehabilitation (convalescent)	40.95	27.12	21.25	38.17	49.69	33.26	—	—	50.50	64.18	41.93
Extended care (chronic)	342.62	—	—	—	362.00	193.69	167.71	644.97	350.35	170.81	291.86
Other	4.42	—	6.15	—	18.30	10.29	10.80	—	6.25	5.80	9.54
All public general and allied special hospitals	8.64	7.55	9.70	10.73	18.42	10.15	10.67	9.98	10.41	11.37	11.90
1977P											
General											
Non-teaching with no long-term units											
1 - 24 beds	4.10	5.92	6.74	7.84	8.37	6.18	8.20	6.65	8.11	5.13	6.89
25 - 49 "	6.19	6.55	7.75	8.52	5.10	7.50	7.76	9.39	6.51	6.59	7.38
50 - 99 "	5.43	7.03	8.13	7.98	7.46	7.87	7.86	7.84	6.63	6.53	7.35
100 - 199 "	8.09	8.02	9.64	7.84	8.51	7.71	6.73	7.75	6.54	7.70	8.18
200+ "	16.56	—	10.28	20.38	18.05	16.95	9.84	20.23	6.98	16.97	17.48
Non-teaching with long-term units											
1 - 99 beds	10.71	—	—	—	27.88	18.04	8.98	8.43	21.53	16.55	10.13
100 - 199 "	—	331.93	9.74	—	10.37	9.55	8.25	12.90	—	9.38	9.92
200+ "	—	—	—	13.58	21.66	20.00	23.00	27.39	—	24.66	21.77
Total, non-teaching	7.48	9.92	9.08	9.91	9.92	9.15	8.74	8.80	6.87	10.42	9.27
Teaching, excluding pediatric	12.75	—	12.37	—	11.84	10.72	11.98	18.22	9.13	11.21	11.08
Total, general	8.71	9.92	9.88	9.91	10.57	9.55	9.87	9.86	7.99	10.51	9.75
Pediatric	9.05	—	7.37	—	6.62	7.64	—	—	7.65	4.80	7.20
Rehabilitation (convalescent)	31.72	22.48	18.24	45.01	51.58	36.12	—	—	—	73.64	41.93
Extended care (chronic)	238.81	241.28	—	—	520.89	189.07	177.59	586.01	361.09	148.57	363.32
Other	—	—	6.07	—	18.19	13.42	20.29	—	6.42	5.60	10.28
Nursing station											
Outpost and other	—	—	—	—	—	—	3.23	—	—	—	3.23
All public general and allied special hospitals	9.11	10.82	9.66	9.95	21.38	10.80	10.75	10.86	10.51	11.81	13.02

¹Includes Yukon and Northwest Territories.

5.13 Operating expense per patient-day by type of expense for reporting public hospitals, by province and type of hospital, 1976 and 1977 (dollars)

Year, province and type of hospital	Gross salaries and wages ¹	Medical and surgical supplies	Drugs	Supplies and other expenses	Total
1976P					
NEWFOUNDLAND					
General	96.80	4.82	3.50	32.09	137.45
Allied special					
Pediatric	110.52	5.81	3.08	42.87	162.28
Rehabilitation (convalescent)	88.12	0.98	0.17	24.74	114.01
Extended care (chronic)	27.17	0.36	0.28	5.65	33.46
PRINCE EDWARD ISLAND					
General	48.26	3.32	2.78	33.18	87.54
Allied special					
Rehabilitation (convalescent)	88.89	0.56	0.57	23.65	113.68
Mental	26.24	0.20	0.49	8.51	35.44
NOVA SCOTIA					
General	91.40	5.32	3.78	33.10	133.61
Allied special					
Pediatric	126.42	7.83	2.67	58.66	195.58
Rehabilitation (convalescent)	49.82	0.82	0.87	23.51	75.02
Other	114.98	7.24	2.85	43.28	168.36
Mental	44.81	0.17	0.55	16.58	62.11
NEW BRUNSWICK					
General	75.53	4.01	2.64	29.29	111.48
Allied special					
Rehabilitation (convalescent)	56.21	1.35	0.60	18.04	76.19
Mental	33.06	0.18	0.36	7.90	41.50
QUEBEC					
General	131.71	5.63	4.05	38.48	179.87
Allied special					
Pediatric	303.21	9.35	7.09	60.12	379.76
Rehabilitation (convalescent)	72.25	2.22	0.58	29.18	104.23
Extended care (chronic)	35.64	0.32	0.57	10.33	46.86
Other	154.88	8.32	3.34	42.25	208.80
Mental	43.85	0.26	0.60	14.99	59.70
ONTARIO					
General	100.97	4.40	3.25	34.06	142.67
Allied special					
Pediatric	205.80	8.13	9.52	75.10	298.56
Rehabilitation (convalescent)	59.05	0.85	0.55	30.18	90.63
Extended care (chronic)	43.03	0.58	0.68	14.48	58.78
Other	143.45	3.46	9.38	60.08	216.37
Mental	58.70	0.15	0.47	15.48	74.80
MANITOBA					
General	92.47	3.91	3.42	32.47	132.26
Allied special					
Extended care (chronic)	55.07	0.51	1.49	14.12	71.18
Other	175.57	2.12	0.61	78.05	256.35
Mental	36.06	0.10	0.61	9.81	46.58
SASKATCHEWAN					
General	71.08	3.37	2.52	26.12	103.10
Allied special					
Extended care (chronic)	35.09	0.65	0.60	10.90	47.24
Mental	37.45	0.14	0.51	7.00	45.10
ALBERTA					
General	91.69	3.96	3.13	27.29	126.07
Allied special					
Pediatric	255.57	4.15	1.29	58.16	319.18
Rehabilitation (convalescent)	82.42	0.67	0.53	34.57	118.19
Extended care (chronic)	30.58	0.33	0.46	11.71	43.07
Other	193.39	3.75	12.23	61.20	270.56
Mental	36.70	0.08	0.35	8.30	45.43

5.13 Operating expense per patient-day by type of expense for reporting public hospitals, by province and type of hospital, 1976 and 1977 (dollars) (continued)

Year, province and type of hospital	Gross salaries and wages ¹	Medical and surgical supplies	Drugs	Supplies and other expenses	Total
1976P (concluded)					
BRITISH COLUMBIA					
General	83.84	3.61	2.53	20.13	110.11
Allied special					
Pediatric	195.94	3.33	2.46	53.29	255.01
Rehabilitation (convalescent)	89.94	0.63	0.63	21.87	113.07
Extended care (chronic)	38.30	0.48	0.33	8.91	48.02
Other	203.92	3.80	10.79	50.94	269.46
Mental	45.59	0.27	0.46	7.26	53.58
NORTHWEST TERRITORIES					
General	85.39	4.31	3.04	40.71	133.45
CANADA					
General	100.63	4.45	3.28	31.77	140.13
Allied special					
Pediatric	218.97	7.99	6.93	64.37	298.27
Rehabilitation (convalescent)	71.11	1.41	0.58	29.08	102.18
Extended care (chronic)	36.93	0.39	0.58	11.23	49.13
Other	157.60	5.59	6.97	51.50	221.67
Mental	47.74	0.17	0.48	12.08	60.47
1977P					
NEWFOUNDLAND					
General	110.62	5.62	4.14	44.30	164.68
Allied special					
Pediatric	130.36	7.12	3.89	58.19	199.56
Rehabilitation (convalescent)	121.95	1.67	0.17	41.83	165.61
Extended care (chronic)	35.37	0.25	0.24	8.20	44.07
PRINCE EDWARD ISLAND					
General	68.65	3.76	3.31	26.32	102.04
Allied special					
Rehabilitation (convalescent)	148.53	1.15	0.39	40.46	190.52
Extended care (chronic)	61.66	1.52	1.12	18.85	83.15
NOVA SCOTIA					
General	96.25	5.77	4.07	36.48	142.58
Allied special					
Pediatric	139.58	7.84	3.12	66.99	217.54
Rehabilitation (convalescent)	65.54	1.29	0.98	32.10	99.91
Other	130.03	8.89	3.30	52.24	194.46
NEW BRUNSWICK					
General	86.15	4.89	3.12	35.10	129.27
Allied special					
Rehabilitation (convalescent)	64.61	0.78	0.91	20.32	86.62
QUEBEC					
General	133.74	5.80	4.16	40.75	184.45
Allied special					
Pediatric	233.61	8.29	6.60	49.91	298.42
Rehabilitation (convalescent)	76.07	2.82	0.64	27.79	107.32
Extended care (chronic)	41.48	0.30	0.59	12.81	55.18
Other	164.78	8.12	3.49	55.40	231.79
ONTARIO					
General	108.30	5.18	3.66	38.01	155.14
Allied special					
Pediatric	241.43	10.04	10.49	86.29	348.25
Rehabilitation (convalescent)	66.54	0.97	0.60	31.51	99.63
Extended care (chronic)	47.45	0.65	0.74	15.48	64.33
Other	184.43	4.30	10.93	80.81	280.47
MANITOBA					
General	99.49	4.61	3.87	35.91	143.87
Allied special					
Extended care (chronic)	60.39	0.53	1.43	15.63	77.99
Other	208.74	1.32	0.52	75.26	285.83
Nursing Station					
Outpost and other	253.28	5.19	1.80	111.58	371.85

5.13 Operating expense per patient-day by type of expense for reporting public hospitals, by province and type of hospital, 1976 and 1977 (dollars) (concluded)

Year, province and type of hospital	Gross salaries and wages ¹	Medical and surgical supplies	Drugs	Supplies and other expenses	Total
1977P (concluded)					
SASKATCHEWAN					
General	76.84	3.91	2.85	28.39	111.99
Allied special					
Extended care (chronic)	32.48	0.51	0.60	9.21	42.80
ALBERTA					
General	101.29	4.80	3.60	31.06	140.75
Allied special					
Pediatric	320.98	6.27	1.67	83.74	412.67
Rehabilitation (convalescent)	90.14	0.73	0.63	37.54	129.04
Extended care (chronic)	33.23	0.39	0.50	14.40	48.52
Other	198.04	4.22	13.33	62.51	278.09
BRITISH COLUMBIA					
General	90.87	4.23	2.87	23.48	121.45
Allied special					
Pediatric	256.18	5.55	3.89	68.94	334.56
Rehabilitation (convalescent)	97.07	0.79	0.89	25.31	124.06
Extended care (chronic)	40.40	0.55	0.41	10.71	52.07
Other	251.27	4.84	15.61	66.63	338.35
NORTHWEST TERRITORIES					
General	102.19	4.21	3.06	48.48	157.94
CANADA					
General	107.70	5.08	3.63	35.45	151.87
Allied special					
Pediatric	220.78	8.72	7.38	68.36	305.25
Rehabilitation (convalescent)	77.86	1.72	0.66	30.40	110.64
Extended care (chronic)	41.66	0.40	0.60	13.20	55.86
Other	181.53	6.25	8.07	64.34	206.19
Nursing station					
Outpost and other	253.28	5.19	1.80	111.58	371.85

¹ Includes medical staff remuneration.

5.14 Expenditure of reporting public general hospitals, by province, 1976 and 1977

1.14 Expenditure of reporting public general hospitals, by province						
Year and province or territory	Reporting hospitals	Expenditure Gross salaries and wages ¹ %	Medical and surgical supplies %	Drugs %	Supplies and other expenses %	Total \$ '000
1976						
Newfoundland	34	70.4	3.5	2.7	23.4	98,762
Prince Edward Island	8	55.1	3.8	3.2	37.9	16,284
Nova Scotia	40	68.4	4.0	2.8	24.8	144,229
New Brunswick	33	67.7	3.6	2.4	26.3	125,877
Quebec	105	73.2	3.1	2.3	21.4	1,237,758
Ontario	190	70.7	3.1	2.3	23.9	1,725,720
Manitoba	77	69.9	3.0	2.6	24.5	220,327
Saskatchewan	131	68.9	3.3	2.5	25.3	187,172
Alberta	115	72.7	3.1	2.5	21.7	353,162
British Columbia	92	76.1	3.3	2.3	18.3	489,015
Yukon	—	—	—	—	—	—
Northwest Territories	3	64.0	3.2	2.3	30.5	4,501
Canada	828	71.8	3.2	2.3	22.7	4,602,806
1977						
Newfoundland	42	67.2	3.4	2.5	26.9	112,892
Prince Edward Island	8	67.2	3.7	3.3	25.8	18,977
Nova Scotia	41	67.5	4.0	2.9	25.6	170,884
New Brunswick	34	66.6	3.8	2.4	27.2	160,457
Quebec	125	72.5	3.1	2.3	22.1	1,442,888
Ontario	199	69.8	3.3	2.4	24.5	1,917,035
Manitoba	77	69.1	3.2	2.7	25.0	241,143
Saskatchewan	131	68.6	3.5	2.6	25.3	207,285
Alberta	115	71.9	3.4	2.6	22.1	393,357
British Columbia	92	74.8	3.5	2.4	19.3	549,802
Yukon	—	—	—	—	—	—
Northwest Territories	3	64.7	2.7	1.9	30.7	6,118
Canada	867	70.9	3.4	2.4	23.3	5,220,838

¹ Includes medical staff remuneration.

5.15 Full-time personnel employed in reporting public, proprietary and federal hospitals, by province, 1974 and 1975

Year and province or territory	General ¹		General and allied special ¹		Mental		Tuberculosis	
	Number	Per 100 rated beds	Number	Per 100 rated beds	Number	Per 100 rated beds	Number	Per 100 rated beds
1974								
Newfoundland	6,383	242.0	7,189	228.7	645	143.3	—	—
Prince Edward Island	1,189	164.9	1,235	164.4	280	94.6	25	166.7
Nova Scotia	9,585	201.6	10,695	202.4	1,565	91.5	295	228.7
New Brunswick	8,272	191.1	8,307	191.1	1,264	92.3	—	—
Quebec	67,253	224.1	83,329	194.4	11,719	72.8	—	—
Ontario	87,041	191.0	98,265	182.7	19,938	125.7	—	—
Manitoba	13,380	198.7	14,103	195.0	2,456	105.6	—	—
Saskatchewan	9,900	140.0	10,494	133.8	1,176	72.5	134	93.1
Alberta	20,122	171.4	23,429	155.0	3,721	84.5	—	—
British Columbia	22,572	157.6	24,763	152.0	4,221	85.8	170	114.9
Yukon	182	122.1	196	120.2	—	—	—	—
Northwest Territories	216	80.9	333	79.9	—	—	—	—
Canada	246,095	191.8	282,338	179.6	46,985	95.8	624	134.2
1975								
Newfoundland	6,863	257.4	7,655	241.3	615	151.9	—	—
Prince Edward Island	1,230	172.0	1,276	171.3	284	96.3	24	160.0
Nova Scotia	10,483	215.0	11,712	215.4	1,581	93.6	61	406.7
New Brunswick	8,264	187.4	8,301	187.4	1,205	98.2	—	—
Quebec	69,491	225.4	87,860	190.4	10,959	77.6	—	—
Ontario	88,062	191.3	99,581	183.8	19,136	122.6	—	—
Manitoba	14,157	211.4	14,980	207.6	2,306	95.0	—	—
Saskatchewan	10,312	143.3	10,900	137.4	1,328	79.0	114	79.2
Alberta	20,979	178.6	24,473	161.7	3,821	89.6	—	—
British Columbia	23,671	160.1	25,972	154.2	4,660	92.9	168	113.5
Yukon	182	122.1	195	119.6	—	—	—	—
Northwest Territories	294	110.9	423	96.8	—	—	—	—
Canada	253,988	194.8	293,328	181.3	45,895	98.2	367	104.6

¹Includes all medical interns and residents, other instructors, school staff and students of formally organized educational programs. Excludes all other medical staff.

5.16 Hospital insurance and diagnostic services, federal and provincial payments (million dollars)

Fiscal year ¹	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.
1961	8	2	19	17	35	201	28	35
1962	10	3	22	20	149	227	32	37
1966	21	3	33	28	302	359	45	53
1967	24	5	38	32	363	414	51	59
1971	40	8	70	54	657	770	90	82
1972	46	9	79	65	744	879	105	91
1973	54	10	86	75	816	977	119	102
1974	66	12	100	85	943	1,119	133	115
1975	83	14	122	102	1,124	1,416	161	141
1976	107	18	150	129	1,467	1,742	205	168
1977	132	19	176	146	1,683	1,964	237	202
1978	131	21	190	155	1,810	2,170	262	223
1979	140	24	211	168	1,923	2,289	272	247
	Alta.	BC	Yukon	NWT	Total	Per capita \$	Increase %	
1961	42	51	1	1	444	25	42	
1962	48	56	1	1	605	33	33	
1966	68	75	1	2	994	50	14	
1967	86	89	1	2	1,162	58	17	
1971	169	174	1	3	2,119	99	14	
1972	190	196	1	4	2,408	111	14	
1973	209	223	1	5	2,677	122	11	
1974	245	275	2	5	3,099	140	16	
1975	298	379	2	7	3,848	171	24	
1976	390	490	3	8	4,876	214	27	
1977	428	560	4	10	5,561	241	14	
1978	459	622	4	14	6,061	260	9	
1979	507	693	4	11	6,490	276	7	

¹Ending March 31.

5.17 Medical care insurance program, federal and provincial payments (million dollars)

Fiscal year ¹	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.
1971	15	2	30	6	67	441	53	35
1972	16	4	33	21	303	480	55	40
1973	17	5	36	24	338	531	47	43
1974	20	5	39	27	372	551	54	45
1975	22	6	45	29	408	560	59	50
1976	27	6	56	34	469	614	64	58
1977	31	7	62	37	536	673	72	65
1978	32	8	66	39	558	741	79	69
1979	35	9	72	47	623	821	86	79
	Alta.	BC	Yukon	NWT	Total	Per capita \$		Increase %
1971	83	122	--	--	853	40		114.1
1972	87	132	--	1	1,172	54		37.5
1973	93	143	1	2	1,280	59		9.2
1974	94	163	1	2	1,373	62		7.2
1975	107	172	1	3	1,463	65		6.6
1976	125	221	2	3	1,678	74		14.7
1977	140	246	2	3	1,873	81		12.0
1978	155	271	2	3	2,023	87		8.0
1979	174	296	3	3	2,250	96		11.0

¹Ending March 31.**5.18 Other health programs, federal and provincial expenditures (million dollars)**

Fiscal year ¹	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	Yukon	NWT	Total
1962	18	2	14	12	128	176	23	34	37	42	--	1	487
1967	28	4	33	22	224	261	36	59	74	88	1	2	832
1971	25	5	35	34	369	431	50	45	93	102	1	2	1,195
1972	28	6	41	29	297	516	51	50	106	111	1	3	1,238
1973	39	7	47	35	388	613	57	46	104	129	1	3	1,470
1974	50	9	54	52	384	635	72	56	131	146	1	3	1,591
1975	63	10	73	50	502	828	101	50	168	209	2	4	2,059
1976	69	13	88	58	694	924	110	99	251	270	3	5	2,578
1977	61	13	76	63	684	987	148	90	257	291	4	11	2,683
1978	67	26	169	95	734	1,177	196	199	379	361	6	9	3,418
1979 ^e	90	21	115	92	1,084	1,186	143	171	427	548	6	18	3,898

¹Ending March 31.**5.19 Total federal, provincial and municipal health expenditures (million dollars)**

Fiscal year ¹	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.
1971	80	15	141	94	1,100	1,684	197	168
1972	89	19	155	115	1,354	1,907	216	186
1973	109	22	171	134	1,547	2,185	231	194
1974	136	25	195	163	1,697	2,356	264	222
1975	168	30	247	180	2,033	2,856	326	247
1976	198	37	301	215	2,479	3,332	388	373
1977	214	40	322	246	2,735	3,711	467	372
1978	221	46	343	264	3,089	4,137	509	441
	Alta.	BC	Yukon	NWT	Total	Per capita \$		Increase %
1971	385	398	3	5	4,270	198		
1972	395	438	2	8	4,884	226		14.4
1973	437	494	3	9	5,537	257		13.4
1974	484	595	5	10	6,151	285		11.1
1975	595	764	5	13	7,465	346		21.3
1976	790	988	7	17	9,064	394		21.4
1977	876	1,120	10	26	10,137	441		11.8
1978	1,026	1,263	11	29	11,391	495		12.4

¹Ending March 31.

5.20 Psychiatric in-patient movement, by type of institution and sex, 1976 and 1977

Year and type of institution	Reporting institutions	Admissions ¹		Separations ²		Patients on books, Dec. 31 ³	
		Male	Female	Male	Female	Male	Female
1976							
Public mental hospital	43	19,633	13,002	20,624	13,675	12,488	9,351
Institution for the mentally retarded	91	2,435	1,597	2,880	2,134	10,928	8,022
Public psychiatric unit	137	25,799	38,596	25,679	38,617	1,723	2,229
Federal psychiatric unit	7	898	70	915	73	769	12
Psychiatric hospital	13	6,605	6,534	6,631	6,574	768	718
Aged and senile home	5	134	89	140	80	514	489
Hospital for addicts	19	7,114	1,330	7,185	1,330	305	59
Treatment centre for emotional-ly disturbed children	60	1,558	904	1,518	949	1,354	628
Epilepsy hospital	2	129	102	119	103	141	61
All institutions	377	64,305	62,224	65,691	63,535	28,990	21,569
1977							
Public mental hospital	42	18,739	12,202	19,457	13,171	11,829	8,458
Institution for the mentally retarded	88	2,576	1,762	2,876	2,159	10,619	7,614
Public psychiatric unit	148	28,707	40,727	28,590	40,646	2,046	2,303
Federal psychiatric unit	6	721	70	711	72	512	3
Psychiatric hospital	13	6,347	5,846	6,317	5,807	772	714
Aged and senile home	5	128	83	147	106	494	464
Hospital for addicts	20	7,193	1,686	7,199	1,691	303	57
Treatment centre for emotional-ly disturbed children	58	1,462	915	1,553	924	1,242	600
Epilepsy hospital	2	120	113	115	109	136	72
All institutions	382	65,993	63,404	66,965	64,685	27,953	20,285

¹Includes first admissions, readmissions and transfers-in.

²Includes discharges, deaths and transfers-out.

³Includes in addition to patients actually in residence those absent on probationary leave, boarding in approved homes, or otherwise absent from the institutions but not officially separated.

5.21 Physicians and population per physician, 1967-77, and by province, 1976 and 1977

Year and province or territory	Active civilian physicians			
	Including interns and residents ¹		Excluding interns and residents ¹	
	Number	Population per physician ²	Number	Population per physician ²
1967	27,544	747	22,472	916
1968	28,209	740	22,969	909
1969	29,659	714	24,430	867
1970	31,166	689	25,657	837
1971	32,942	659	27,439	791
1972	34,508	636	28,606	767
1973	35,923	619	29,944	743
1974	37,297	605	31,108	726
1975	39,104	585	32,561	703
1976	40,130	578	33,754	687
1977	41,398	566	34,860	673
1976				
Newfoundland	779	720	634	885
Prince Edward Island	140	857	136	882
Nova Scotia	1,404	594	1,137	734
New Brunswick	773	884	713	958
Quebec	11,262	556	9,152	685
Ontario	15,251	546	12,801	651
Manitoba	1,769	581	1,477	695
Saskatchewan	1,315	708	1,138	818
Alberta	2,911	645	2,400	782
British Columbia	4,470	556	4,110	606
Yukon	22	1,000	22	1,000
Northwest Territories	33	1,303	33	1,303
Canada	40,130	578	33,754	687

5.21 Physicians and population per physician, 1967-77, and by province, 1976 and 1977 (concluded)

Year and province or territory	Active civilian physicians		Excluding interns and residents ¹	
	Including interns and residents ¹			
	Number	Population per physician ²	Number	Population per physician ³
1977				
Newfoundland	803	704	641	881
Prince Edward Island	141	865	137	891
Nova Scotia	1,478	568	1,187	708
New Brunswick	781	886	723	957
Quebec	11,545	544	9,524	659
Ontario	15,692	538	13,076	646
Manitoba	1,811	572	1,491	691
Saskatchewan	1,390	679	1,209	781
Alberta	3,014	642	2,534	764
British Columbia	4,684	539	4,278	590
Yukon	25	880	25	880
Northwest Territories	34	1,294	34	1,294
Canada	41,398 ³	566 ³	34,860	673

¹Based on data in Canada Health Manpower Inventory, 1976 and 1977; Health and Welfare Canada.²Based on Statistics Canada estimates of the population as of Jan. 1 of the following year.³Combination of sales management systems and provincial data.5.22 Nurses registered and working in Canada, and population per nurse, 1966-76, and by province, 1975 and 1976¹

Year and province or territory	Number	Population per nurse
1966	79,729	254
1967	81,904	251
1968	92,618	226
1969	100,003	212
1970	104,258	206
1971	108,630	200
1972	110,769	198
1973	115,929	192
1974	125,475	180
1975	140,388	163
1976	137,858	168
1975		
Newfoundland	2,648	209
Prince Edward Island	755	159
Nova Scotia	5,179	160
New Brunswick	3,676	186
Quebec	33,031	188
Ontario	58,087	143
Manitoba	5,906	173
Saskatchewan	5,857	159
Alberta	10,903	165
British Columbia	14,034	177
Yukon and Northwest Territories	312	189
Canada	140,388	164
1976		
Newfoundland	2,815	199
Prince Edward Island	813	148
Nova Scotia	5,677	147
New Brunswick	4,272	160
Quebec	28,294	221
Ontario	56,717	147
Manitoba	6,978	147
Saskatchewan	6,303	148
Alberta	10,915	172
British Columbia	14,691	169
Yukon	94	234
Northwest Territories	289	149
Canada	137,858	168

¹Based on data in Canada Health Manpower Inventory, 1976 and 1977; Health and Welfare Canada.

5.23 Health professionals by selected categories of health manpower, for Canada, 1976¹ and 1977¹

Category	Year	
	1976	1977
Active audiologists and speech therapists	1,048	1,203
Biomedical engineers	209	286
Licensed chiropractors	1,700	1,902
Dental assistants	2,928	3,001
Licensed dental hygienists	1,684	2,003
Active dentists	9,401	10,058
Registered dietitians	2,654	2,814
Electroencephalograph technologists	331	322
Health record administrators	2,055	2,113
Health service executives	1,198	1,318
Active laboratory technologists	13,976	14,573
Medical radiation technologists		3,027
Active nurses	137,858	
Licensed nursing assistants	71,572	74,672
Active occupational therapists	1,384	1,340
Active opticians	2,303	2,429
Active optometrists	1,764	1,841
Active orderlies (1974)	12,996	
Osteopaths	67	61
Licensed pharmacists	14,887	15,328
Active physicians	40,130	41,398
Active physiotherapists	3,065	3,052
Registered podiatrists	150	152
Public health inspectors	807	815
Registered radiological technicians	7,373	
Registered respiratory technologists	1,421	1,494
Veterinarians	2,975	3,483
Total	335,936	

¹Excludes persons who are not active members of an occupational association nor included in a professional registry.

5.24 Reported cases of selected notifiable diseases and rate per 100,000 population, by province, 1977 and 1978

Year and International List No.	Disease	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alla.	BC	YT	NWT	Canada
1977														
Number of cases														
009.1	Diarrhoea of the newborn, epidemic	—	10	2	1	—	—	—	—	4	—	1	1	19
032	Diphtheria	—	—	—	—	11	10	9	1	75	7	1	10	124
004	Dysentery, bacillary	16	—	8	—	59	316	175	80	246	101	10	126	1,137
062.1	Encephalitis, western equine	—	1	—	—	—	—	5	—	—	—	—	—	5
16	Food poisoning, bacterial	16	—	1	—	11	—	5	1	22	1	—	2	59
005.0	Staphylococcal	16	—	1	—	9	—	5	1	21	—	—	—	53
005.1	Botulism	—	—	—	—	2	—	—	—	1	1	—	2	6
152	Hepatitis, infectious (including serum hepatitis)	73	73	24	16	284	850	959	328	1,034	899	7	225	4,851
124	Hepatitis, infectious	73	73	10	15	120	558	935	309	957	884	5	225	4,215
999.2	Hepatitis, serum	28	1	14	1	164	292	24	19	77	15	2	—	636
055	Measles	1,012	1	738	144	1,869	3,946	105	156	512	310	9	31	8,832
10	Meningitis, aseptic, due to enteroviruses	3	10	9	9	33	2	9	65	9	14	1	3	168
045.0	Coxsackie virus	—	1	1	—	1	2	2	—	—	—	—	—	7
045.1	ECHO virus	—	—	—	—	21	—	1	—	—	—	—	—	22
045.9	Not specified	10	2	9	9	11	—	6	65	9	14	1	3	139
036	Meningococcal infections	17	3	11	15	13	62	6	27	41	40	1	5	241
056	Rubella (German measles)	31	1	31	18	423	918	74	144	376	78	22	44	2,159
217	Salmonella infections, other	217	9	71	24	831	1,970	100	147	536	307	3	13	4,228
003.0	With food as vehicle	98	1	24	8	—	—	5	—	265	—	—	—	401
003.9	Without mention of food as vehicle	119	8	47	16	831	1,970	95	147	271	307	3	13	3,827
034	Streptococcal sore throat and scarlet fever	174	5,764	2,302	15	231	3,426	3,271	497	5,797	539	322	1,142	23,480
010-018	Tuberculosis ^a	90	10	99	98	941	944	173	145	280	352	8	57	3,197
001	Typhoid and paratyphoid fever	—	—	3	5	31	61	2	4	3	9	—	1	119
002	Typhoid	—	—	—	4	21	49	1	4	3	6	—	1	89
002	Paratyphoid	—	—	3	1	10	12	1	—	—	—	—	—	30
098	Veneral diseases	701	84	930	266	5,412	17,982	4,908	3,612	8,332 ^a	10,018	416	1,626	54,287
090-097	Gonococcal infections	692	81	890	258	4,750	16,199	4,803	3,556	8,208	9,760	414	1,622	51,233
090-097	Syphilis	9	3	40	8	658	1,770	70	56	124	258	—	2	2,998
099.0, 099.1, 099.2	Other	—	1	—	—	4	13	35	—	—	—	2	2	56
033	Whooping cough	4	289	88	35	250	1,138	15	54	69	45	—	1	1,988

5.24 Reported cases of selected notifiable diseases and rate per 100,000 population, by province, 1977 and 1978 (continued)

Year and International List No.	Disease	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT	NWT	Canada
1977 (continued)														
Rate per 100,000 population														
009.1	Diarrhoea of the newborn, epidemic	—	8.3	0.2	0.1	—	—	—	—	0.2	—	—	2.3	0.1
032	Diphtheria	—	—	—	—	0.2	0.1	0.9	0.1	3.9	0.3	4.7	23.1	0.5
004	Dysentery, bacillary	2.8	—	1.0	—	0.9	3.8	17.0	8.5	12.9	4.0	46.5	291.0	4.9
062.1	Encephalitis, western equine	—	1	—	—	—	—	0.5	—	—	—	—	—	—
005.0	Food poisoning, bacterial	2.8	—	0.1	—	0.2	—	0.5	0.1	1.2	—	—	4.6	0.3
005.1	Staphylococcal	2.8	—	0.1	—	0.1	—	0.5	0.1	1.1	—	—	—	0.4
	Botulism	—	—	—	—	—	—	—	—	0.1	—	—	4.6	—
	Hepatitis, infectious (including serum hepatitis)	27.0	60.7	2.9	2.3	4.5	10.2	93.0	35.0	54.4	36.0	32.6	519.6	20.8
070	Hepatitis, infectious	22.0	60.7	1.2	2.2	1.9	6.7	90.7	33.0	50.4	35.4	23.3	519.6	18.1
999.2	Hepatitis, serum	5.0	1	1.7	0.1	2.6	3.5	2.3	2.0	4.1	0.6	9.3	—	2.7
055	Measles	179.9	1	88.3	21.0	29.7	47.1	10.2	16.7	27.0	12.4	41.9	71.6	38.1
	Meningitis, aseptic, due to enteroviruses	1.8	2.5	2.0	1.3	0.5	—	0.9	6.9	0.5	0.6	4.7	6.9	0.7
045.0	Coxsackie virus	—	0.8	0.1	—	—	—	0.2	—	—	—	—	—	—
045.1	ECHO virus	—	—	—	—	0.3	—	0.1	—	—	—	—	—	0.9
045.9	Not specified	1.8	1.7	1.1	1.3	0.2	—	0.6	6.9	0.5	0.6	4.7	6.9	0.6
036	Meningococcal infections	3.0	2.5	1.3	2.2	0.2	0.7	0.6	2.9	2.2	1.6	4.7	11.5	1.0
056	Rubella (German measles)	5.5	1	3.7	2.6	6.7	11.0	7.2	15.4	19.8	3.1	102.3	101.6	9.3
	Salmonella infections, other	38.6	7.5	8.5	3.5	13.2	23.5	9.7	15.7	28.2	12.3	14.0	30.0	18.2
003.0	With food as vehicle	17.4	0.8	2.9	1.2	—	1	0.5	—	13.9	—	—	—	2.7
003.9	Without mention of food as vehicle	21.2	6.7	5.6	2.3	13.2	23.5	9.2	15.7	14.3	12.3	14.0	30.0	12.1
034	Streptococcal sore throat and scarlet fever	30.9	4,791.4	275.6	2.2	3.7	40.9	317.2	53.1	305.2	21.6	1,497.7	2,637.4	100.8
010-018	Tuberculosis ^a	16.0	8.3	11.9	14.3	15.0	11.3	16.8	15.5	14.7	14.1	37.2	131.6	13.7
	Typhoid and paratyphoid fever	—	—	0.4	0.7	0.5	0.7	0.2	0.4	0.2	0.4	—	2.3	0.5
001	Typhoid	—	—	—	0.6	0.3	0.6	0.1	0.4	0.2	0.2	—	2.3	0.4
002	Paratyphoid	—	—	0.4	0.1	0.2	0.1	0.1	—	—	0.1	—	—	0.1
098	Veneral diseases	124.6	69.8	111.3	38.8	86.1	214.7	475.9	385.7	438.6	401.1	1,934.9	3,755.2	233.1
090-097	Gonococcal infections	123.0	67.3	106.5	37.6	75.6	193.5	465.7	379.7	432.1	390.8	1,925.6	3,746.0	220.0
099.0, 099.1,	Syphilis	1.6	2.5	4.8	1.2	10.5	21.1	6.8	6.0	6.5	10.3	—	4.6	12.9
099.2	Other	—	1	—	—	0.1	0.2	3.4	—	—	—	9.3	4.6	0.2
033	Whooping cough	0.7	240.2	10.5	5.1	4.0	13.6	1.5	5.8	3.6	1.8	—	2.3	8.5

5.24 Reported cases of selected notifiable diseases and rate per 100,000 population, by province, 1977 and 1978 (continued)

Year and International List No.	Disease	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT	NWT	Canada
1978p		Number of cases												
009.1	Diarrhoea of the newborn, epidemic	—	12	8	—	—	—	1	—	12	—	2	—	35
032	Diphtheria	—	—	—	—	—	3	10	—	81	17	6	2	119
004	Dysentery, bacillary	38	1	10	9	221	281	170	85	183	105	2	62	1,167
062.1	Encephalitis, western equine	—	1	—	—	—	—	—	—	—	—	—	—	—
005.0	Food poisoning, bacterial	—	—	12	8	45	—	33	41	46	1	—	2	188
005.1	Staphylococcal	—	—	12	8	45	—	33	41	46	1	—	—	186
	Botulism	—	—	—	—	—	—	—	—	—	—	—	2	2
	Hepatitis, infectious (including serum hepatitis)	27	13	38	7	261	845	599	259	647	803	7	29	3,535
070	Hepatitis, infectious	13	13	22	4	80	476	554	217	519	791	3	27	2,719
999.2	Hepatitis, serum	14	1	16	3	181	369	45	42	128	12	4	2	816
055	Measles	39	1	346	148	292	2,828	976	150	889	130	18	42	5,858
	Meningitis, aseptic, due to enteroviruses	9	3	7	2	39	—	13	25	36	15	3	2	154
045.0	Coxsackie virus	—	—	6	—	12	—	—	—	—	1	—	—	19
045.1	ECHO virus	—	—	—	—	7	—	—	—	4	—	3	—	14
045.9	Not specified	9	3	1	2	20	—	13	25	32	14	—	2	121
036	Meningococcal infections	17	1	49	10	31	109	11	16	56	43	—	4	347
056	Rubella (German measles)	21	1	16	15	371	1,305	372	184	861	90	9	26	3,270
	Salmonella infections, other	229	17	160	57	1,097	2,796	254	262	854	908	33	26	6,693
003.0	With food as vehicle	—	9	86	22	91	6	137	4	437	1	—	6	799
003.9	Without mention of food as vehicle	229	8	74	35	1,006	2,790	117	258	417	907	33	20	5,894
034	Streptococcal sore throat and scarlet fever	1,064	4,791	2,231	6	183	2,287	3,364	655	5,465	1,297	926	1,139	23,408
010-018	Tuberculosis ^a	114	2	75	79	704	878	177	149	265	376	19	47	2,885
	Typhoid and paratyphoid fever	3	—	—	4	37	64	5	1	8	15	—	1	138
001	Typhoid	—	—	—	1	27	47	3	1	6	13	—	1	99
002	Paratyphoid	3	—	—	3	10	17	2	—	2	2	—	—	39
	Veneral diseases	636	128	1,092	248	5,109	17,445	4,296	3,095	8,586 ^a	9,119	367	1,508	51,629
098	Gonococcal infections	624	127	1,073	244	4,416	15,859	4,214	3,050	8,428	8,844	366	1,506	48,751
090-097	Syphilis	12	1	19	4	689	1,576	77	45	158	275	—	—	2,856
099.0, 099.1, 099.2	Other	—	1	—	—	4	10	5	—	—	—	1	2	22
033	Whooping cough	20	46	53	7	192	2,151	13	21	56	103	4	—	2,666

5.24 Reported cases of selected notifiable diseases and rate per 100,000 population, by province, 1977 and 1978 (concluded)

Year and International List No.	Disease	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT	NWT	Canada
1978 (concluded)														
		Rate per 100,000 population												
009.1	Diarrhoea of the newborn, epidemic	—	10.0	1.0	—	—	—	0.1	—	0.6	—	9.3	—	0.2
032	Diphtheria	—	—	—	—	—	—	1.0	—	4.3	—	27.9	—	0.5
004	Dysentery, bacillary	6.8	0.8	1.2	1.3	3.5	3.4	16.5	9.1	9.6	4.2	9.3	143.2	5.0
062.1	Encephalitis, western equine	—	1	—	—	—	—	—	—	—	—	—	—	—
005.0	Food poisoning, bacterial	—	—	1.4	1.2	0.7	—	3.2	4.4	2.4	—	—	4.6	0.8
005.1	Staphylococcal	—	—	1.4	1.2	0.7	—	3.2	4.4	2.4	—	—	—	0.8
	Botulism	—	—	—	—	—	—	—	—	—	—	—	4.6	—
	Hepatitis, infectious (including serum hepatitis)	4.8	10.8	4.5	1.0	4.2	10.1	58.1	27.7	34.1	32.2	32.6	67.0	15.2
070	Hepatitis, infectious	2.3	10.8	2.6	0.6	1.3	5.7	53.7	23.2	27.3	31.7	14.0	62.4	11.7
999.2	Hepatitis, serum	2.5	1	1.9	0.3	2.9	4.4	4.4	4.5	6.7	0.5	18.6	4.6	3.5
055	Measles	6.9	1	41.4	21.6	4.6	33.8	94.6	16.0	46.8	5.2	83.7	97.0	25.3
	Meningitis, aseptic, due to enteroviruses	1.6	2.5	0.8	0.3	0.6	—	1.3	2.7	1.9	0.6	14.0	4.6	0.7
045.0	Coxsackie virus	—	—	0.7	—	0.2	—	—	—	—	—	—	—	0.1
045.1	ECHO virus	—	—	—	—	0.1	—	—	—	0.2	—	14.0	—	0.1
045.9	Not specified	1.6	2.5	0.1	0.3	0.3	—	1.3	2.7	1.7	0.6	—	4.6	0.5
036	Meningococcal infections	3.0	0.8	5.9	1.5	0.5	1.3	1.1	1.7	2.9	1.7	—	9.2	1.5
056	Rubella (German measles)	3.7	1	1.9	2.2	5.9	15.6	36.1	19.6	45.3	3.6	41.9	60.0	14.1
	Salmonella infections, other	40.7	14.1	19.2	8.3	17.5	33.4	24.6	28.0	45.0	36.4	153.5	60.0	28.7
003.0	With food as vehicle	—	7.5	10.3	3.2	1.4	0.1	13.3	0.4	23.0	—	—	13.9	3.4
003.9	Without mention of food as vehicle	40.7	6.7	8.9	5.1	16.0	33.3	11.3	27.5	22.0	36.3	153.5	46.2	25.3
034	Streptococcal sore throat and scarlet fever	189.2	3,982.5	267.1	0.9	2.9	27.3	326.2	69.9	287.7	51.9	4,307.0	2,630.5	100.5
010-018	Tuberculosis ^a	20.3	1.7	9.6	11.5	11.2	10.5	17.2	15.9	13.9	15.1	88.4	108.5	12.4
	Typhoid and paratyphoid fever	0.5	—	—	0.6	0.6	0.8	0.5	0.1	0.4	0.6	—	2.3	0.6
001	Typhoid	—	—	—	0.1	0.4	0.6	0.3	0.1	0.3	0.5	—	2.3	0.4
002	Paratyphoid	0.5	—	—	0.4	0.2	0.2	0.2	—	0.1	0.1	—	—	0.2
	Veneral diseases	113.1	106.4	130.7	36.1	81.3	208.3	416.6	330.5	452.0	365.1	1,707.0	3,482.7	221.7
098	Gonococcal infections	110.9	105.6	128.4	35.5	70.3	189.4	408.6	325.7	443.6	354.1	1,702.3	3,478.1	209.3
090-097	Syphilis	2.1	0.8	2.3	0.6	11.0	18.8	7.5	4.8	8.3	11.0	—	—	12.3
099.0, 099.1, 099.2	Other	—	1	—	—	0.1	0.1	0.5	—	—	—	4.7	4.6	0.1
033	Whooping cough	3.6	38.2	6.3	1.0	3.1	25.7	1.3	2.2	2.9	4.1	18.6	—	11.4

^aNot reportable.^bTuberculosis figures are provisional.^cIncludes 8 cases of syphilis, type undetermined.^dIncludes 5 cases of syphilis, type undetermined.

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Education in Canada

6.1

Post-secondary expansion

6.1.1

Bolstered by the last students born in the baby boom after World War II and a tendency for more students to stay in school longer, enrolment in post-secondary education grew modestly in the late 1970s while lower levels showed declines. Post-secondary enrolment levelled off in universities while expanding in community colleges and vocational training institutions. More students remained in school until secondary graduation and about 60% of these graduates entered post-secondary institutions.

Elementary-secondary enrolment was 5,374,000 in 1977-78, down 2% from the previous year and a half million below the 1970-71 record. Falling birth rates since 1960 have produced an enrolment slump at every level as the children matured.

The number of full-time elementary-secondary teachers fell from 278,300 in 1972-73 to 259,500 in 1977-78. However, because the number of teachers has not decreased as quickly as enrolment, every year there has been a smaller number of students in relation to teachers.

In contrast, the number of full-time post-secondary teachers doubled in the decade 1968-78. It rose in both universities and non-university institutions, but more rapidly in the latter to keep pace with enrolment.

Spending for education from kindergarten through graduate studies was \$15 billion for 1976-77, and estimates place the 1977-78 figure at \$17.1 billion. Elementary-secondary education absorbed \$11.4 billion of the 1977-78 total. Universities received \$3.3 billion; non-university institutions \$1.3 billion; and vocational training \$1.1 billion.

History of education

6.1.2

The earliest organized forms of education in the territory that was to become Canada were under church control. Quebec was founded as a colony of France in 1608 and the first school soon opened. But it was not until 1824 that Quebec passed an education act. Nova Scotia had done so in 1766, followed by New Brunswick in 1802 and Ontario in 1807. However, education at lower levels continued to be church-dominated until the mid-19th century.

During the 1840s and 1850s a public system of education was developed in Quebec (Canada East), supplemented by schools and colleges operated by Roman Catholic orders. At the same time, Ontario (Canada West) also established a public system, as did the Maritimes (New Brunswick, Nova Scotia and Prince Edward Island). Higher education before Confederation was conducted in private institutions, most controlled by religious authorities.

Constitutional responsibility. The British North America Act, passed by the British Parliament in 1867, united four provinces, Ontario, Quebec, New Brunswick and Nova Scotia. Section 93 of the act placed education “exclusively” under the control of each province, confirming variations in the systems that already existed. As other provinces were admitted (Manitoba 1870, British Columbia 1871, Prince Edward Island 1873, Saskatchewan and Alberta 1905 and Newfoundland 1949) the provisions of the section were reaffirmed.

Officially the act recognized no federal presence in education. However, the federal government assumed direct responsibility for the education of persons beyond the bounds of provincial jurisdiction — Indians and Inuit, armed forces personnel and their families, and inmates of federal penal institutions. As the education enterprise expanded, indirect federal participation in the form of financial aid became extensive.

The education explosion. Until the late 1940s, Canada, according to a report by the Organization for Economic Co-operation and Development, was “one of the less

educationally developed of the great democracies." Today it ranks among the world's educational leaders. This evolution was compelled by unprecedented population growth combined with the desire of students to continue to higher levels.

The population grew because of the post-war baby boom and sizable net immigration. Rising expectations and widespread belief in education as a means of upward mobility encouraged students to stay in school longer. Consequently, Canada's educational enrolment in the post-war period increased faster than that of any other industrialized country. Between 1951 and 1971 combined elementary-secondary enrolment more than doubled. The 1960s were the decade of fastest growth, with the number of elementary-secondary students increasing 40% and post-secondary enrolment 168%. Such growth necessitated construction of new schools, expansion of the post-secondary sector and a commensurate rise in numbers of teachers at all levels.

As well as increasing facilities and personnel, it was imperative to revise the curriculum to reflect new social and economic realities. A more industrialized and sophisticated economy imposed new standards on the labour force. The comprehensive secondary school, offering a wide range of options, was recognized as part of the answer to the need for versatility and choice.

In elementary schools, enrolment reached its peak in 1967-68 at 3,844,000. Secondary enrolment patterns follow the elementary level by seven or eight years and peaked at 1,808,600 in 1974-75. The record high for elementary-secondary combined stood at 5,900,000 in 1970-71. Full-time enrolment at all levels, including post-secondary, was also highest in 1970-71, with 6,364,000, a 46% increase in a decade.

Expansion of the education enterprise could not occur without a spending increase. In 1947 education expenditures totalled \$350 million. By 1960 they had risen to \$1.7 billion. During the 1960s, expenditures grew at an average yearly rate of more than 10% (sometimes 20%) to \$7.7 billion in 1970. These expenditures were equivalent to 9% of GNP and absorbed 22% of government spending, more than any other major area. By 1977 expenditures on education represented 8.2% of GNP and social welfare had assumed first place.

The decline in the birth rate and lower levels of immigration have produced an enrolment decline in elementary-secondary schools that is expected to persist into the 1980s. The 1970-71 peak is unlikely to be attained again this century.

6.1.3 Provincial administration

Each province and territory is responsible for its own education system. As a consequence, organization, policies and practices differ from one to another. A department of education in every province is headed by a minister who is an elected member of the provincial cabinet or, in the case of the territories, a councillor. Policy-making power rests with the department; the influence of the legislature is confined to formal matters such as passing budgets. Some provinces have established separate departments for post-secondary education. Where two departments exist there may be two ministers, or one may have dual jurisdiction.

While the education minister has general authority, day-to-day operation of the department is carried out by a deputy minister who advises the minister and supervises all functions of the department. These include: supervision and inspection of elementary and secondary schools; provision of curriculum and school organization guidelines; approval of new courses and textbooks; production of curriculum materials; finance; teacher training and certification; prescription of regulations for trustees and teachers; research; and support services such as libraries, health and transportation.

In most provinces, responsibility for teacher training has been transferred from teachers' colleges to faculties or colleges of education in universities. Increasingly, an elementary teacher must have a bachelor's degree. The Nova Scotia Teachers' College is the only institution of its kind remaining in the country.

Other provincial departments have some responsibility for education, operating apprenticeship programs, agricultural schools, reform schools and forest ranger schools.

Levels of education. Despite such variations as the ages of compulsory attendance, course offerings and graduation prerequisites, the education systems that evolved in

each province basically consist of three levels: elementary, secondary and post-secondary. The number of years required to complete each level and the dividing lines between them vary from province to province.

Elementary and secondary education

6.2

At the elementary and secondary level, most public schools are operated by local education authorities according to public school acts of the provinces. This category includes Protestant and Roman Catholic separate schools, and schools operated in Canada by the defence department within the framework of the public system. Private schools, church-affiliated or non-sectarian, are operated and administered by private individuals or groups. Private kindergartens and nursery schools for children of pre-elementary age offer education at that level only. These schools may be church-affiliated and are administered by private individuals or groups. Schools for the handicapped provide special facilities and training. Most are under direct provincial government administration. Federal schools are administered directly by the federal government including overseas schools operated by the defence department for dependents of servicemen, and Indian schools operated by the Indian and northern affairs department.

Local administration. Schools in all provinces are established under a public school act and operated by local authorities answering to the provincial government and resident ratepayers. Provincial authorities delineate school board areas. With the growth of cities and towns, and of educational facilities and requirements, small local boards have been consolidated into central, regional or county units with jurisdiction over both elementary and secondary schools in a wider area. The boards, composed of elected or appointed trustees or commissioners, are responsible for school management. Their powers are determined and delegated by the legislature or education departments and vary from province to province. Generally, they handle the business aspects of education — establishment and maintenance of schools, appointment of teachers, purchase of supplies and equipment, details of school construction and budget preparation. Boards are authorized to levy taxes and manage grants from the department.

Grade structure. School attendance is compulsory for about 10 years in every province — the starting age is 5, 6 or 7, and the minimum leaving age, 15 or 16. However, the elementary-secondary program usually extends over 12 years. Particularly in urban areas, local authorities may also provide an introductory year of education prior to grade one. More than 1,200 private kindergartens operate under varying degrees of provincial supervision. Some private kindergartens admit 3-year-olds.

Before the secondary level, education is general and basic. High school students usually have a choice of two programs — academic or vocational. The latter range from one to four years. At one time secondary schools were predominantly academic and prepared students for university. Vocational schools were separate institutions, located only in large cities. Today, in addition to technical and commercial high schools, most secondary institutions are composite or comprehensive. Programs include both purely academic courses as a prelude to university, and vocational courses that prepare students either for an occupation or for further post-secondary non-university education. Vocational training covers such subjects as home economics, agriculture, shop-work and commercial skills.

The principle of promotion by subject has been implemented to a greater extent in secondary schools than at the elementary level. Some jurisdictions have partially or entirely eliminated age-grouped classes. The length of schooling depends on accumulation of a requisite number of credits. Thus subject-promotion is replacing grade-promotion. Most provinces have abolished external graduating examinations administered by the education department; schools conduct their own. Diplomas are still issued by the province on the recommendation of individual schools.

Other types of schools

6.2.1

Separate schools. One obvious difference among provincial education systems is in provision for separate schools. Some provinces allow religious groups to establish

schools under the authority of the education department. They must conform to department regulations on curriculum, textbooks and teacher certification. As legal corporations, separate school boards can levy taxes and receive government grants but not always at the same level as the public system.

Private schools. Between 3% and 4% of all elementary-secondary students attend schools operated independently of the public systems. Provincial policies on private institutions vary from direct operating grants to minimum provincial control. Independent schools have been established as alternatives to the public system, based on religion, language, or academic or social status.

Special education. A number of strategies have been developed to educate children with special needs or abilities, an estimated 5%-10% of all students. They may be accommodated in separate institutions, public or private, or in special or integrated classes in regular schools. For quick learners, there are enriched and accelerated elementary and secondary programs. Education for the handicapped varies from province to province, and is most common in city systems. Schools for the blind and deaf are sometimes administered directly by a province, sometimes by interprovincial agreement. Many local systems operate schools or classes for disabled children. Nonetheless, the trend, and the official goal in several provinces, is for handicapped students to stay in regular school as long as possible.

6.2.2 Federal schools

Although education is a provincial responsibility, the federal government has assumed direct control over the education of persons beyond the jurisdiction of the provinces — native peoples and armed forces personnel and their families.

6.2.2.1 Department of Indian and Northern Affairs

Education of registered Indian and Inuit children is an obligation of the Indian and northern affairs department. The minister is authorized to maintain schools for Indian children directly or provide education services through a provincial government, the commissioners of Yukon and Northwest Territories, a public or separate school board, or a religious or charitable organization.

On reserves, the federal government owns and operates some 250 schools. The minister makes regulations on matters such as buildings, inspection and teaching. More than 100 native band councils now manage their own schools.

About half the native children attend provincial public schools. The federal government reimburses the provinces, either by paying tuition or contributing to the school's capital costs. Most children of secondary age attend public schools. Indian representation is increasing on local provincial school boards — approximately 100 Indians are now formal school board members in various provinces. In Yukon and Northwest Territories, Indian and northern affairs co-operates with territorial departments of education to educate native children. The last school there to be administered directly by the federal government closed in 1969.

Counselling units are maintained in Ottawa and Winnipeg to assist northern native students attending high school, technical school, college and university in southern Canada. These units were established in the mid-1960s and have worked with an increasing number of students each year.

6.2.2.2 Department of National Defence

The defence department maintains schools for dependents of service personnel at military establishments in Canada and overseas. The policy is to avoid building schools wherever the children can attend existing institutions. Provinces are reimbursed on a per-pupil basis for armed service dependents in public schools. The curriculum in such schools follows that of the province where they are located. There are 11 overseas schools in Belgium, the Netherlands and the Federal Republic of Germany. The elementary curriculum in these schools is a composite of various provincial programs; grades 7 to 13 follow the Ontario curriculum.

Financing the elementary-secondary system

6.2.3

In 1977-78, expenditures on the elementary-secondary level were an estimated \$11.4 billion or 67% of all education spending.

Financing elementary-secondary education was traditionally a municipal responsibility, local real estate taxes paying most of the cost of basic education. School boards determine their budgets and therefore the taxes required. In most cases municipalities levy and collect taxes for the boards. Where there is no municipal organization the boards have these powers. Taxes on real estate are still a vital element of elementary-secondary finance but the municipal share has declined in recent years to less than 20%.

Rapid post-war expansion of the need for educational services caused other levels of government to become more deeply involved in funding elementary and secondary schools. At the end of the 1940s provincial governments were contributing less than 20% of net general expenditures. During the next decade education spending tripled to more than \$1 billion. This reflected rising enrolment, improvement of teacher salaries, large-scale building programs and the growth of special services. As budgets increased, municipal authorities requested more support from provincial governments.

The relative contributions of the two levels differ from province to province, each provincial authority deciding the magnitude of its responsibility. A system of formula financing determines distribution. The intention is first to secure minimum standards, and second to moderate differences of wealth and income in different localities.

Part of this support actually comes from the federal government, channelled through the provinces. Federal expenditures cover some 3% of the elementary-secondary total, including what was spent on Indian and overseas schools. The federal government also contributes to elementary-secondary education under a federal-provincial program of co-operation for development of bilingualism in education.

Post-secondary education

6.3

Universities and degree-granting colleges

6.3.1

Several types of degree-granting institutions exist in Canada. Universities have, as a minimum, degree programs in arts and sciences; liberal arts colleges are smaller institutions with degree programs, usually only in arts; theological colleges grant degrees exclusively in theology; other specialized colleges offer degree programs in a single field, such as engineering, art or education. There are more than 60 degree-granting institutions in Canada.

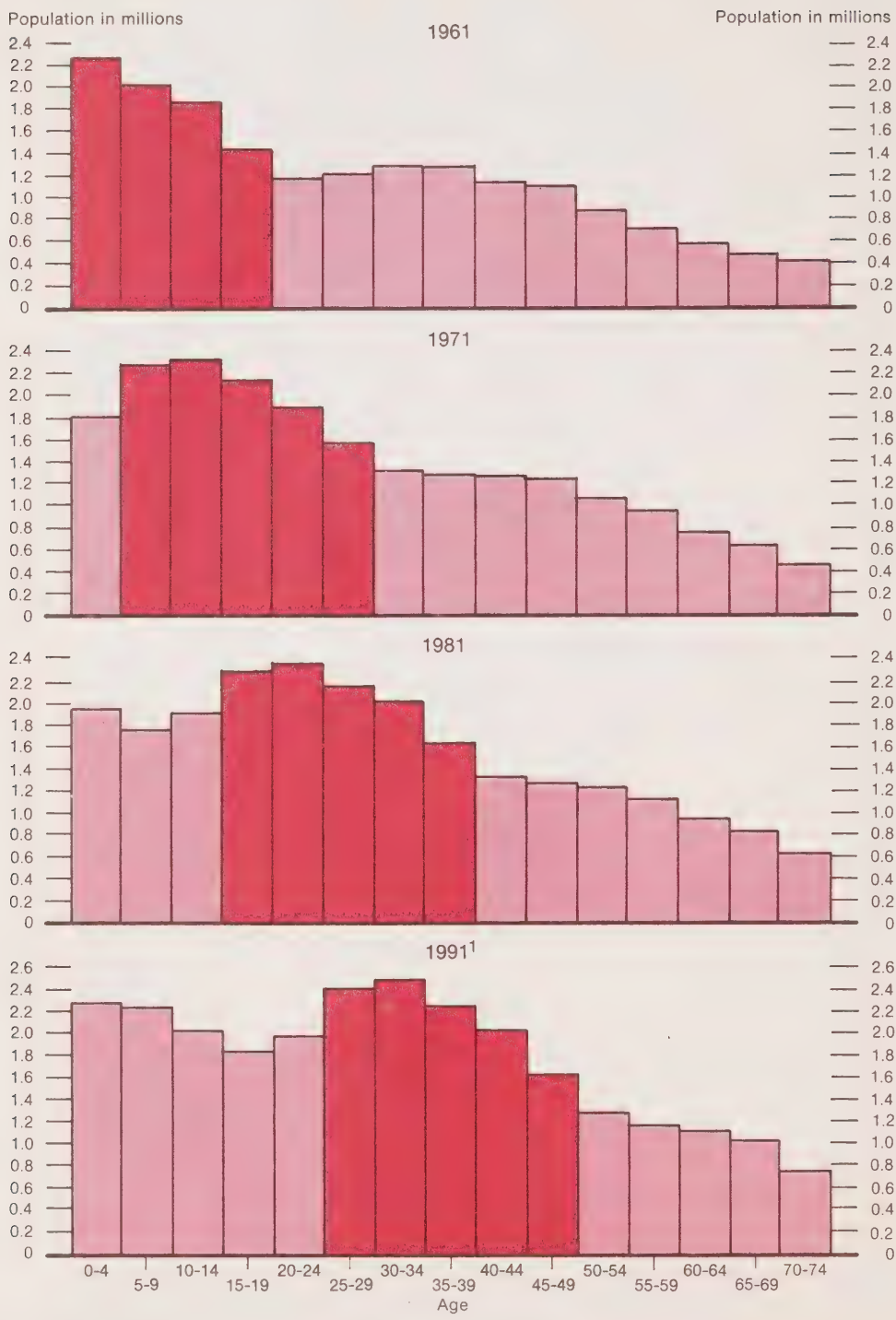
History. The first institutions in Canada followed European models. The Séminaire de Québec, founded in 1663, was the base upon which Université Laval was established in 1852. The oldest English-language institution, King's College, at Windsor, NS opened in 1789. By 1867 Quebec had three universities and 712 classical colleges. There were three universities in New Brunswick, five in Nova Scotia and seven in Ontario. As well as in Nova Scotia, King's colleges had been established in New Brunswick and Ontario. Queen's and Victoria universities, supported by the Presbyterian and Methodist churches, had been chartered in Ontario. Their purpose was to train the clergy and a small, select group of laymen who wished to enter the professions. Teaching concentrated on theology, philosophy, the classics, medicine and law.

About the middle of the 19th century McGill University introduced courses in natural sciences, opened a normal school for elementary teachers and pioneered instruction in applied science and engineering. Similar changes were taking place at other universities — Dalhousie in Halifax, Queen's in Kingston, and the University of Toronto.

While the trend in English-language institutions was toward practical and scientific studies and secular control, in the French-language sector emphasis continued on classical studies under clerical control.

When the four western provinces were settled, other structures began to emerge. The American example of land-grant colleges led to a strong commitment to extension programs and community service. The University of Manitoba was granted a charter in 1877. In Saskatchewan and Alberta provincial universities were established in 1909 and

The baby boom grows up



1. Projection: 1991 fertility rate of 2.1; net immigration of 75,000 a year.

1908, respectively. The University of British Columbia, although chartered in 1908, did not open until 1915. By the outbreak of World War I, a score of universities in Canada had developed distinctive characteristics. To the traditional faculties of theology, law and medicine, schools of engineering, agriculture, forestry, education, dentistry and home economics had been added.

There was some institutional expansion after World War I. In 1939 Canada had 28 universities, varying in size from the University of Toronto with full-time enrolment of about 7,000 to institutions with fewer than 1,000 students. There were about 40,000 students, representing 5% of the population between the ages of 18 and 24.

Radical changes began after World War II. As a result of a veteran's rehabilitation program, 53,000 ex-soldiers entered the universities between 1944 and 1951. The immediate problem of space was solved by temporary buildings and creation of satellite colleges. By the mid-1950s, places vacated by veterans had been filled with an increasing number of high school graduates. Demands for university expansion continued but the full force of this pressure came in the 1960s when enrolment rose from 128,600 in 1961-62 to 323,000 in 1971-72. During the 1970s enrolment fell in some years, despite the continued increase in the 18-24 population.

Governments in all provinces became increasingly involved in financing and planning university development. Federal concern was manifested by a system of grants inaugurated in 1951-52. Initially 50 cents per capita of provincial population, the grant increased to \$1 in 1957, \$1.50 in 1958, \$2 in 1962 and \$5 in 1966. A new formula introduced in 1967 led to a transfer to provinces of \$750 million by 1971-72. The universities, most of which had operated as private institutions before 1960, became heavily dependent on public funds. Religious sponsorship and control were modified to permit sectarian institutions to receive public support.

In the early 1970s growth rates began to decline. Enrolment in most universities was below forecasts and larger numbers of students withdrew before completing their degrees. Part-time students began to increase in numbers more rapidly than those registered for full-time study. A decline in full-time enrolment is expected in the 1980s although interest in part-time and extension study continues to grow.

Curriculum. Admission to university is usually after 11 to 13 years of schooling. Each institution controls its admission standards and policies. With provincial examinations discontinued in recent years, the school record has become the main basis for judging applicants. It is customary for students to enter directly from high school, except in Quebec where they qualify through the *collèges d'enseignement général et professionnel* (CEGEPs). Most universities provide for the admission of mature students, including those who do not meet normal entrance requirements.

The first or bachelor's degree is awarded after three or four years of full-time study. Admission to law, medicine, dentistry, business administration and theology is usually conditional upon completion of part or all the requirements for the first degree. A distinction may be made between general and honours degrees; the latter are more specialized and sometimes require an additional year of study. A bachelor's degree at the honours level or the equivalent is necessary for acceptance into a master's program. Most entail one year of study, but some take two years. Entrants to doctoral studies must have a master's degree in the same field.

Some universities are bilingual, the University of Ottawa, Laurentian University of Sudbury and Université Sainte-Anne being notable examples. Instruction is offered in both English and French. Other universities conduct classes in one language only but permit students to submit term papers, examinations and theses in either French or English.

Higher education for women. Admission of women to undergraduate studies began in the 19th century but their numbers grew slowly. In the 1920s fewer than one-fifth of full-time students were women, and even after World War II the proportion had risen only to one-quarter. By 1970, however, it had increased to more than one-third and is currently almost equal to male enrolment. Women are now accepted in all faculties and with the integration of nursing, education and social work into universities they predominate in the social and health sciences. Their enrolment in graduate studies has

risen less rapidly and as a result the increase in women staff members has not been as noticeable.

Teaching staff. During the 1960s the demand for growth necessitated rapid and massive staff recruitment. From about 7,000 in 1960-61, the full-time teaching force has increased to more than 30,000. Most new appointees were Canadians but the number from other countries was significant. Canadian universities have never produced enough graduates to supply their own needs and about 30% of teachers are nationals of other countries. Recent changes in immigration and employment requirements are aimed at ensuring that foreign faculty are hired only after all efforts to recruit qualified Canadians have been exhausted.

Most Canadian universities have four teaching ranks: lecturer, assistant professor, associate professor and full professor. Although appointees are customarily expected to have a doctorate, in practice this applies only in the pure sciences. The percentage of full-time professors with doctorates is now more than 60%.

Students. The 367,000 full-time students in Canadian universities in 1977-78 were equivalent to 12% of the population age 18 to 24 and about double the proportion in 1960. In addition, 208,000 part-time students were registered in degree programs.

Tuition fees are charged, usually differing from one faculty to another. In Alberta, Ontario, Quebec and some universities in New Brunswick and Nova Scotia, higher fees are required of foreign students. In the early 1960s one-quarter of university income was derived from student fees but with the increase in public funding this proportion has been reduced to approximately one-eighth. An estimated 40% of all students take advantage of the federal student loans plan.

Finance. The 1960s marked a turning point in higher education finance as governments began to assume a major share of support. From the beginning of that decade, expenditures rose from about \$273 million to more than \$1 billion in 1967-68, and to an estimated \$3.3 billion in 1977-78. Together, federal and provincial governments contributed more than 80% of the total.

Between 1958 and 1966 federal grants were distributed, except to Quebec, through the Canadian Universities Foundation, the executive agency of the National Conference of Canadian Universities, predecessor of the Association of Universities and Colleges of Canada. From 1967, federal aid was broadened to include all post-secondary institutions and funds were transferred to provincial governments. The provinces could choose between a per capita grant based on total provincial population or 50% of approved post-secondary operating expenditures. Newfoundland, Prince Edward Island and New Brunswick chose the former; the others, the latter. The original agreement, a section of the Federal-Provincial Fiscal Arrangements Act, extended over the five-year period 1967-72. It was renewed for two years in 1972 and for another three in 1974. A new condition stipulated that the total increase in the federal share for any given year would be limited to 15% of the preceding year.

This agreement expired on March 31, 1977. It has been replaced by the Established Programs Financing (EPF) plan covering education, hospital insurance and medicare. Half the federal payment consists of a transfer of tax points to the provinces (13.5 points of personal income tax and one point of corporation tax). The other half is a per capita cash grant. The tax portion, based on 1975-76, will grow with the tax base, while per capita grants will increase in relation to the gross national product. EPF will be in effect for at least five years with a three-year notice of termination.

6.3.2 Community colleges

Traditionally, higher education was the almost exclusive preserve of universities. Now, although universities still account for about 60% of full-time students, post-secondary education is conducted in a variety of other institutions without degree-granting status. While the term "community college" is used to refer to these establishments in a general sense, there is a variety of designations: colleges of applied arts and technology in Ontario; colleges of general and vocational education in Quebec, referred to in English as CEGEP, an acronym from the French designation collèges d'enseignement

général et professionnel; institutes of applied arts and sciences in Saskatchewan; institutes of technology or technical institutes; colleges of agricultural technology; and colleges providing training in other specialized fields, such as fisheries, marine and paramedical technologies.

There are about 200 institutions offering college-level programs in Canada. In the past the term "college" applied to constituent parts of a university. However, it now generally refers to the community colleges which, with support from provincial and federal governments, have developed since 1960 as an alternative to university. A community college is any public or private non-degree-granting institution which provides post-secondary university transfer programs or semi-professional career programs, as well as other credit or non-credit educational programs oriented to community needs. In Quebec completion of a two-year college level program is required for university admission.

Hospital schools of nursing are not considered community colleges, but do comprise part of non-university enrolment. In any case, many provinces have transferred nursing training to community colleges.

History. Many of today's community colleges began as private church-related colleges, public technical schools or university affiliates. But not until the 1960s, often on the recommendation of special commissions, did the provinces attempt to organize post-secondary non-university education into a community college system, either by transforming older institutions or founding new ones. Colleges are based on the philosophy that educational opportunities should extend beyond existing schools and universities to include a broader segment of society. Criteria of admission are flexible. Secondary school graduation is normally required but in some institutions mature student status allows otherwise ineligible applicants to enter. Qualifying programs are also offered to help them attain the appropriate academic level.

Organization. The recent development, structure and organization of post-secondary non-university education differ from province to province. Not all institutions were transformed into community colleges and amalgamated into a province-wide network. A number operate privately. However, the provinces are partially or totally responsible for co-ordinating, regulating and financing community colleges. Some provincial governments finance them completely, while others do so in part. Similarly, the colleges' local autonomy varies.

There are four main patterns of provincial government management: direct establishment and operation, largely confined to institutes of technology in the West and the Atlantic provinces; a triangular partnership between the government, colleges and school district boards, existing only in British Columbia; much delegation of provincial administrative responsibility to college boards, co-ordinated by a provincial commission or board, as in Ontario and New Brunswick; a partnership between the department of education and college boards supplemented by non-governmental college associations, as in Quebec.

Curriculum. Colleges offer two basic programs: university transfer and semi-professional career. The former enable students to proceed to university with degree credit of one or two years. The latter prepare them for direct entry into the labour force. Career programs take at least one academic year but more often two or three, sometimes four. Graduates of one-year programs receive certificates, those of longer programs, diplomas.

Quebec students who wish to attend university must first complete two preparatory years in a college of general and vocational education. By contrast, Ontario's colleges of applied arts and technology do not maintain a transfer program; however, universities in Ontario have agreed to admit with advanced standing college graduates on the basis of individual merit.

Staff. Unlike university faculty who are obliged to conduct scholarly research in addition to teaching, community college staff concentrate almost exclusively on instruction. From an estimated 4,900 in 1964-65, the number of full-time teachers at the post-secondary level in non-university institutions rose to 19,000 in 1977.

Students. Total full-time enrolment in post-secondary, non-university institutions in 1977-78 was 240,000, a 6% increase over 1976-77. About two-thirds of the students were in community college career programs. Another one-third were taking university transfer programs. About 2% were in hospital schools of nursing and the Nova Scotia Teachers' College. Half the students were female, but this reflects nursing enrolment. While women predominated in career programs, they were outnumbered by men in transfer programs. Quebec students accounted for 56% of the total. Enrolment in Ontario represented slightly more than one-fourth, followed by British Columbia (7%) and Alberta (6%).

Nursing. In 1964 Toronto's Ryerson Institute of Technology became the first non-hospital institution to provide nurses' training. Since then most diploma programs were transferred from hospital schools to community colleges. The former no longer exist in Quebec, Ontario or Saskatchewan. In the other western provinces there is still training in hospital schools but programs are also available in community colleges. Only in the Atlantic region is training carried out exclusively in hospital schools.

6.3.3 Technical and trades training

Technical and trades training varies between and within provinces. It is offered in public and private institutions such as community colleges, institutes of technology, trade schools and business colleges. It may also take place on the job, in apprenticeship programs or training in industry.

History. Early in the 20th century, the rapid growth of industrialization gave added importance to acquiring technical skills. Since public schools or universities rarely gave such instruction, this was one of the first areas of education in which the federal government became actively involved. In co-operation with several provinces, an agricultural training program was set up in 1913. Three years earlier the Royal Commission on Industrial Training and Vocational Education had made recommendations, and a number of them were implemented in the Technical Education Act of 1919. Under the act, federal authorities offered to support provincial programs but few provinces were ready to participate. By World War II, however, enough programs had been instituted to warrant appointment of a national council of federal, provincial and public representatives to advise the labour minister on matters relating to vocational education. At that time most vocational institutions were administered by a variety of provincial government departments such as labour, agriculture, commerce and industry.

During the 1950s a shortage of technical manpower prompted federal officials to give the provinces more aid for vocational training. By 1960 about 30 technical institutes had been opened. In 1961 the Technical and Vocational Education Act was passed. It was designed to encourage the provinces to extend and improve facilities. Thereafter, new comprehensive schools frequently incorporated vocational programs. Federal participation increased after 1966 with adoption of the Adult Occupational Training Act and purchase of courses given in various types of provincial institutions. Under this act, a training-in-industry program was inaugurated in 1967 and a training-on-the-job program in 1971. Both were superseded by an industrial training program in 1974.

Institutions and programs. Technical career programs are conducted in community colleges and related post-secondary non-university institutions. High school graduation is usually required for admission. In programs lasting up to four years, students are trained to practise a career directly upon graduation. Some community colleges also give vocational instruction but graduates of career programs are generally qualified for semi-professional work.

Trades level courses emphasize manipulative skills and performance of established procedures and techniques. Less than one year is normally needed to complete them. Grade 9 or 10 is usually required for entrance but prerequisites vary.

Public trade schools and vocational centres concentrate on vocational skills and are administered by a provincial department. They may be separate establishments but in most provinces they now exist as divisions of a community college. Only persons who

have left the regular school system and are older than the compulsory age may attend. High school graduation is not usually required although, depending on the province and the trade, admission standards can range from grade 8 to grade 12. Included in this group are adult vocational centres and schools related to specific occupations such as police work, forestry and nursing.

A number of institutions offer academic upgrading courses designed to raise a trainee's general level of education in one or a series of subjects. Courses may be taken to qualify for admission to higher academic studies or vocational training. The federal government sponsors basic training for skill development in community colleges and adult vocational centres. However, completion of levels corresponding to the final grades of secondary school does not give high school graduation status.

Rather than attend an educational institution, individuals may acquire trades training as they work. Training on the job is organized instruction offered in a production environment. Skills relating to a specific trade or occupation are learned in a step-by-step approach.

Training in industry is provided by business and industrial establishments to train new employees, retrain experienced workers or upgrade their qualifications. It may be publicly supported, in full or in part, or entirely financed by the company. Training can be on the job, by classroom instruction, or a combination of the two. Under cost-sharing agreements the federal government reimburses companies that provide training. The provincial governments monitor the publicly supported company programs and approve them for federal support.

Apprenticeship programs combine on-the-job training with classroom instruction. Persons contract with an employer to learn a skilled trade and eventually reach journeyman status. Apprentices may be registered with a provincial or territorial labour or manpower department in order to train in an apprenticeship trade. The department sets standards for journeyman qualification: minimum age, educational levels for admission, minimum wages, duration of apprenticeship and the ratio of apprentices to journeymen. Non-registered apprentices enter into a private agreement with an employer, perhaps in association with a labour union. They are not subject to regulations established by the provincial department for that trade.

The federal Vocational Rehabilitation for Disabled Persons Act facilitates trades-training for the handicapped. The federal government reimburses the provinces for 50% of costs for programs that enable disabled people to support themselves fully or partially. The provinces provide training directly in community colleges and trade schools or purchase it from the private sector or voluntary agencies. Quebec does not participate.

In co-operation with the provinces, the federal government has introduced standard interprovincial examinations to promote the mobility of journeymen. Those who pass examinations in certain apprenticeable trades have an interprovincial seal attached to their certificate, allowing them to work in any province.

Staff. In 1976-77 full-time educational staff administering and teaching trades level courses numbered 5,400. On the average, they had seven years of teaching experience and two years in industry. At the same time, 18,600 were administering and teaching in post-secondary technical programs.

Students. In 1976-77 an estimated 417,000 full-time students were enrolled in institutions providing technical and trades training. About three-quarters were in community colleges, and most of these were studying at the technical level. The rest were distributed between public trade schools and hospital schools. The same year there were 260,000 business and industry trainees.

Business was the most popular field in both career programs and trades level courses. Second place in career enrolment was taken by medical and dental fields, while at the trades level, engineering and medical technologies and trades were next.

Continuing education

Continuing or adult education is adapted to the needs of persons not in the regular system. Out-of-school adults (15 and older) are able to pursue accreditation at diverse

levels or to advance their personal interests. Continuing education is given by school boards, provincial departments of education, community colleges and related institutions, and universities. Programs are also conducted or sponsored by non-profit organizations, professional associations, government departments, business and industry. However, it is not centred exclusively around institutions. As well as the time-honoured correspondence course, instruction is now available from travelling libraries, radio and television.

History. School boards and provincial departments of education have conducted evening classes for adults since the turn of the century. Rapid development occurred after World War II. By the late 1950s more than 445,000 enrolments in academic and vocational courses were reported.

At the post-secondary level, extension programs have been part of some universities for many years. Probably most successful were those in the provincial universities of the West. Agricultural extension education was provided in Alberta and

Ontario and Quebec account for about 72% of Canada's post-secondary students. Another 21% are in the Prairie provinces and British Columbia, and the remaining 7% in the Atlantic region. More than 40% of all university students are concentrated in Ontario, while Quebec has over half the non-university enrolment because of the extensive network of collèges d'enseignement général et professionnel, which are an integral part of the province's educational system.

Saskatchewan; at St. Francis Xavier University in Nova Scotia, fishermen's co-operatives were organized. Besides these practical and vocational programs, other cultural and recreational services were developed by several urban universities in Central Canada. Some courses were for academic credit, others not. Many were offered only on campus, others in external centres as well.

Since the end of World War II, demand for continuing education increased. New teaching media, such as television, have broadened the range of facilities. Extramural courses and degrees are now available from most universities.

Programs and courses. Individuals can participate in continuing education part time in regular credit programs, or as students in non-credit programs. Credit courses sponsored by school boards and departments of education may be applied toward a high school diploma. Credits in academic or vocational subjects can be acquired through evening classes or correspondence study. Post-secondary credit courses count toward a degree, diploma or certificate.

Non-credit programs consist of courses for personal enrichment or for leisure use. Instruction is given in hobby skills (for example, arts and crafts), social education (health and family life), recreation (sports and games), and driver education. Professional development and refresher courses are also available.

Both programs include formal and non-formal courses. Formal courses are structured units of study presented systematically. Non-formal courses are activities for which registration is not required but where attendance for a scheduled period is necessary.

Elementary-secondary institutions. Each province and territory has its own method of conducting continuing education. Administrative control is usually assigned to individual school boards, but a variety of funding schemes has resulted in programs of different size. Continuing education is best developed under the jurisdiction of large, urban-based boards.

In Saskatchewan all school board programs are administered by a network of community colleges, although school board facilities are used. Likewise, Holland College in Prince Edward Island administers continuing education courses formerly

provided by the education department. A similar administrative change from school boards to community colleges is occurring in British Columbia and New Brunswick. However, many boards still offer continuing education programs. The departments of education in Newfoundland and the Northwest Territories administer the programs from head office, while school board facilities are used for instruction. In Yukon, continuing education courses conducted by the education department are available through a vocational and technical training centre.

Community colleges and trade schools. Almost all community colleges and many public trade schools now provide part-time learning opportunities for adults. In 1977-78, some 150 institutions operated extension courses ranging from academic upgrading and vocational programs to hobby courses. Part-time enrolment includes students in vocational training (trades level) and semi-professional career programs, academic upgrading, owner-manager supervisory courses sponsored by the employment and immigration commission, and personal enrichment courses.

Universities. Most universities conduct non-credit programs and part-time credit enrolment has always been substantial. The Banff Continuing Education Centre in Alberta has a program similar to that of the universities.

While the extent and type of involvement vary, extension programs for students who cannot attend on-campus classes are an accepted responsibility. Manitoba has established regional resource centres to which universities and other types of educational institutions contribute. Quebec has successfully developed Téléuniversité as a branch of the Université du Québec, and Memorial University is a North American pioneer in teaching at a distance. Athabasca University in Alberta and the Open Learning Institute in British Columbia are open universities which produce and deliver learning programs for adults who wish to study in their own communities or are unable to attend a traditional post-secondary institution.

Students. Overall, during 1976-77 more than 1.8 million students were taking continuing education courses at the various institutional levels. In relation to the out-of-school population 15 and over, 118 out of every 1,000 people were enrolled, up from 89 per 1,000 in 1972-73.

Some 450,000 students registered in formal continuing education courses offered by community colleges and trade schools in 1976-77. In four years non-credit enrolment increased by more than 200%, compared with a 40% rise in credit courses. As in elementary-secondary institutions, fine and applied arts were predominant. Business management ranked second and trade and technical courses third.

The 575,000 students in university part-time credit and formal non-credit courses in 1976-77 outnumbered total full-time enrolment by 200,000. More than half the part-time students were enrolled in credit courses but formal non-credit enrolment increased at a faster rate. Business and management were most popular non-credit courses. Next were the social sciences, health sciences and humanities.

Education in the provinces and territories

6.4

Although a general structure of education prevails throughout the country, the system in each province is unique. Diverse historical developments, cultural traditions, geographic situations, and economic and social conditions have resulted in 12 education systems. Furthermore, even within a province, school organization may vary from one region to another.

Newfoundland

6.4.1

Established in 1874, the education system in Newfoundland was originally sectarian. As a result of a 1964 provincial royal commission on education and youth, the school systems of the major Protestant denominations were consolidated, although the Roman Catholic, Pentecostal and Seventh Day Adventist churches still manage their own schools. Reorganization in 1969 divided the province into six regions containing a total of 35 school districts. The Pentecostal Assemblies and the Seventh Day Adventists

operate a single district which theoretically covers the whole province. The Roman Catholic system is largest, but its school boards have been cut from more than 100 to 12.

Children age 7 to 15 must attend school. Enrolment before grade one is not compulsory, but with construction of larger, more centralized elementary schools, most 5-year-olds go to kindergarten. School organization follows two major patterns: elementary (kindergarten and grades 1-6) with central high schools (grades 7-11), and elementary (kindergarten and grades 1-8) with regional high schools (grades 9-11). Grade 12 is scheduled to begin in 1981-82. There are a few junior high schools (grades 7-9) and about a dozen district vocational schools.

Technical training is provided by the Newfoundland College of Trades and Technology and the College of Fisheries, Navigation and Marine Engineering and Electronics. Registered nurse diploma courses are conducted exclusively in hospital schools. Memorial University grants undergraduate and graduate degrees, diplomas and certificates. The campus is located in St. John's but extension programs operate in 26 centres. Memorial has a two-year campus in Corner Brook.

6.4.2 Prince Edward Island

Throughout the 1960s small education units were consolidated. In 1972 the system was changed to one consisting of five administrative units with a school board in each. The age span of compulsory attendance is 7 to 15. Kindergarten is not part of the public system but private classes are available. The major pattern of organization is: elementary (grades 1-6), junior high (grades 7-9) and senior high (grades 10-12). In some cases, there are only two levels: elementary (grades 1-8) and high school (grades 9-12). No provision is made for separate schools.

A network of regional high schools offers academic programs from grades 9-12 and a one- or two-year business education course. After grade 12, four additional years are required for a bachelor's degree. Two vocational high schools are operated by Holland College on behalf of the education department.

At the post-secondary level, Holland College offers non-degree programs but because of the province's small population extensive technical education facilities have not been developed. Interprovincial arrangements allow students to attend the Nova Scotia Agricultural College and institutions in Central Canada. The Prince Edward Island School of Nursing is the only establishment from which a nursing diploma may be obtained. In 1969 the University of Prince Edward Island was created as an amalgamation of St. Dunstan's University and Prince of Wales College.

6.4.3 Nova Scotia

School board amalgamation occurred in 1968. For education purposes, the province is divided into municipalities, town sections, city sections and regional units, each with its own board.

Nova Scotia is the only province where pre-grade one (known in the province as primary) is obligatory, so the ages of compulsory attendance extend from 5 to 16. The predominant grade organization is: elementary (primary to grade 6), junior high (grades 7-9), and senior high (grades 10-12). Secondary graduation occurs after grade 11 (junior matriculation) or grade 12 (senior matriculation). A bachelor's degree requires three years of study beyond grade 12. The only vocational education given by regular high schools is in business and commercial subjects. Students in various secondary grades may choose one-, two- or three-year occupational training programs at regional vocational schools, most of which are operated by the province. Although there is no provision for separate schools, local boards can designate certain schools and teachers for instruction of religious or language groups.

Nova Scotia has two institutes of technology offering trades and post-secondary technical courses, an agricultural college providing terminal and university transfer programs, a land survey institute and a nautical institute. The Canadian Coast Guard College is in Sydney. All diploma education for nurses is conducted by hospital schools. The Nova Scotia Teachers' College is the only independent normal school in Canada.

Graduate and undergraduate degree programs are available in the province's 11 degree-granting institutions. The Nova Scotia government contributes to the support of

Mount Allison University in New Brunswick since many Nova Scotians attend it. The government also supports the faculty of forestry at the University of New Brunswick. In turn, New Brunswick and Prince Edward Island students are supported at the Nova Scotia Agricultural College, and at the faculties of medicine and dentistry at Dalhousie.

New Brunswick

6.4.4

The province is divided into seven regions, each administered by a superintendent, and subdivided into 33 school districts. Every district is under the authority of a board of trustees. All board members serve a three-year term. Some are elected; others are appointed by the lieutenant-governor-in-council.

School attendance is compulsory from 7 to 16. Kindergarten is not offered in the public system. Students progress through 12 years of school to junior matriculation. The most common organization patterns are: elementary (grades 1-6), junior high (grades 7-9) and senior high (grades 10-12) or elementary (grades 1-6) and high school (grades 7-12). Secondary students have a choice of three programs: college preparatory and technical; general educational and occupational; and practical. No provision is made for separate schools.

The New Brunswick Institute of Technology, the Saint John Institute of Technology and Northeastern Community College offer post-secondary vocational and technical programs. The Maritime Forest Ranger School is located in Fredericton. In addition to hospital schools, the Saint John School of Nursing provides RN training.

After grade 12, four years of study are required for a first degree. The province's four universities are the University of New Brunswick, St. Thomas University, Mount Allison University and Université de Moncton, the last providing higher education to the French-speaking population.

Quebec

6.4.5

Much of the present education system resulted from a 1961 royal commission study of education. In 1964, acting on the commission's recommendations, the government passed legislation that created a ministry of education. The province was divided into nine administrative areas, each containing a regional education office headed by a director. A superior council of education was also created in 1964 as a public consultative body to supplement the department. Its 24 members are appointed by the government for a four-year term.

Each municipality has one or more public schools under the control of school commissioners or trustees. Elected five-member boards of school commissioners operate schools for an area's majority population, Roman Catholic or Protestant. However, a minority of ratepayers may constitute a separate school municipality under a board of school trustees. This three-member board, too, is elected and can own property, levy taxes, receive government grants, operate schools and hire teachers. The province, excluding Montreal, contains 189 school commissions grouped into 64 regional school boards; nine are Protestant. Montreal has an additional seven school commissions.

The ages of compulsory attendance are 6 to 15 although kindergartens admitting 5-year-olds are now part of the system. Elementary school consists of six years based on continuous progress. The comprehensive secondary program lasts five years. Promotion throughout is by subject and, unlike most other provinces, a final departmental exam is required for graduation.

Post-secondary education begins in the tuition-free CEGEPs. Inaugurated in 1967-68, CEGEPs generally resulted from reorganization of existing institutions such as normal schools, classical colleges and technical institutes. They are administered by a public corporation composed of faculty, students, parents and community representatives but depend wholly on the education department for revenue. The department regulates budgets and issues guidelines for curriculum and administration.

Students complete a CEGEP program before going to university. As well as a two-year preparatory academic program, CEGEPs provide three-year vocational programs that train students for direct labour market entry. Of the 37 CEGEPs, four are English-language institutions. Nursing diploma training takes place only in the CEGEPs.

Private or classical colleges offer the equivalent of the two-year CEGEP university transfer program. Students may, however, continue at the college and work toward a degree from the university with which it is affiliated.

The first degree requires three additional years of study after completion of two CEGEP years. The seven universities in the province (three of them English-language) have a variety of undergraduate and graduate degree, diploma and certificate programs. A semi-independent universities council plans their general development and makes recommendations on operating and capital budgets. It is chaired by a government official but includes representatives of the public and the universities.

6.4.6 Ontario

Ontario was the first province to divide responsibility for education between two departments, a ministry of education and a ministry of colleges and universities, but reverted to one (the ministry of education) in 1979.

Since 1966 the number of school boards in Ontario has been reduced from 1,600 to 193. Three types of boards exist: boards of education (76), non-sectarian bodies responsible for elementary and secondary education in large areas such as counties, districts, cities; boards which operate one type of school only (108), such as public elementary schools and Roman Catholic separate schools; and boards operating schools on Crown lands (9).

Roman Catholic schools provide tax-supported educational services for kindergarten through grade 10. In some schools of separate boards, grades 11, 12 and 13 are also offered but these grades constitute a private school and are not under the jurisdiction of the board.

Attendance is compulsory from 6 to 16 years. Most schools provide an optional year of kindergarten for 5-year-olds, and in some urban areas, junior kindergarten for 4-year-olds. Ontario has a 13-grade system: elementary school lasts eight years, secondary five. However, as continuous progress has become popular, the conventional grade pattern has been modified. The detailed standardized course of study has been replaced by curriculum guidelines issued by the ministry. The curriculum has been divided into four three-year segments: primary, junior, intermediate and senior.

Secondary education operates on a credit system; 27 credits are required for a graduation diploma (grade 12). Six additional credits in honour level work are required for an honour graduation diploma (grade 13); this is necessary for university admission. High schools also offer trade, technical and business programs that prepare students for either immediate employment or entry to a college of applied arts and technology (CAAT) or other post-secondary non-university institution.

In the mid-1960s institutes of technology and provincial vocational centres were incorporated into CAATs. A network of 22 on more than 50 campuses provides technical and trades programs for students who do not intend to go to university. Although CAATs were not designed to accommodate prospective transfer students, universities do admit some graduates into the second or third year of degree courses. CAATs are completely under the jurisdiction of the ministry of education. The Ontario Council of Regents, a 15-member body appointed by the government, advises on new programs and other matters. Each college is a separate corporation with a 12-member board of governors. In addition to CAATs, post-secondary non-university training is available in four colleges of agricultural technology, a school of horticulture, a chiropractic college and an institute of medical technology.

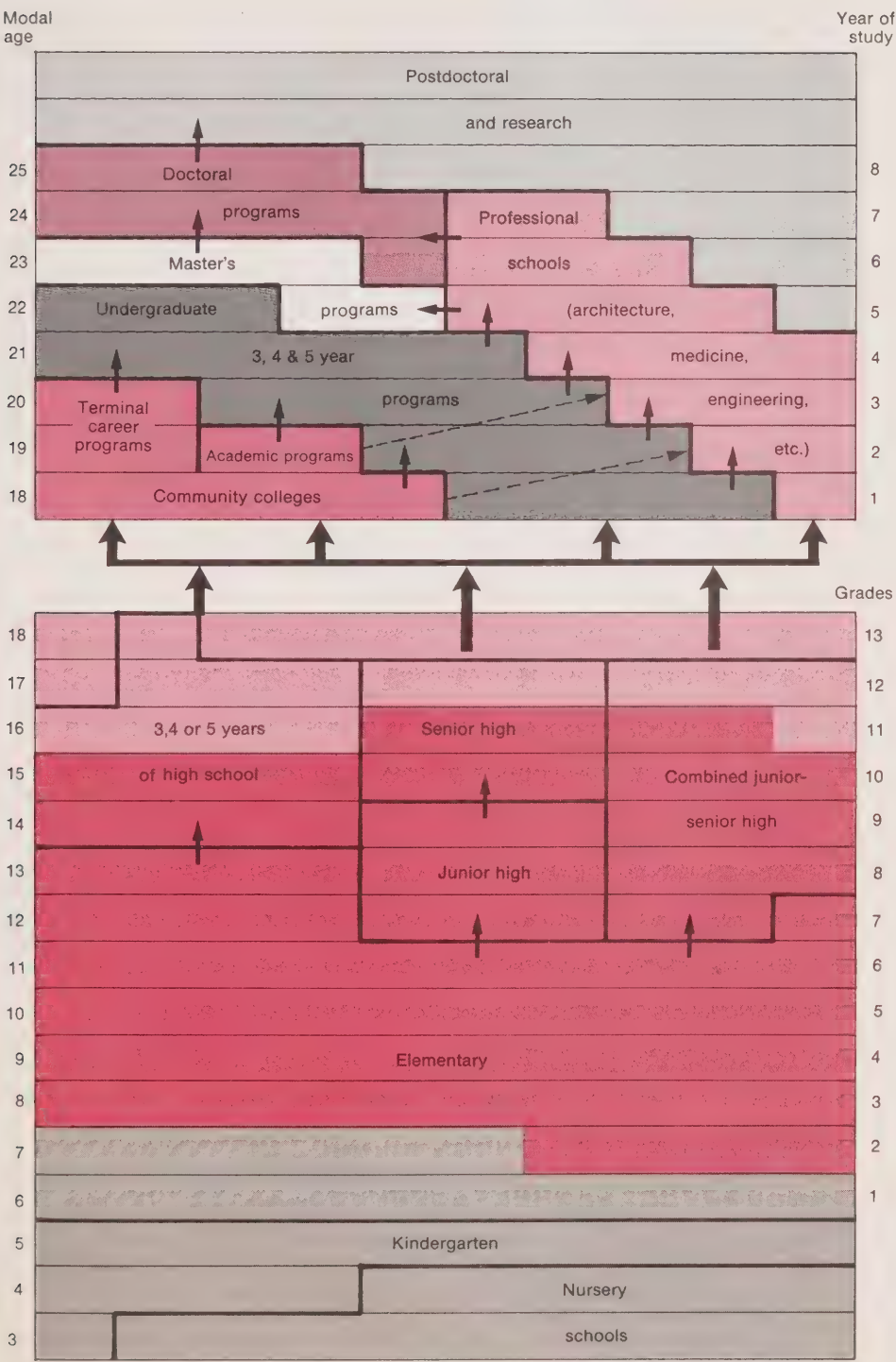
Ontario's 21 degree-granting universities offer undergraduate and graduate programs leading to degrees, diplomas and certificates in a wide range of fields.

6.4.7 Manitoba

As of July 1, 1978, the two provincial departments of education and continuing education were combined to be known as the department of education.

Over 90% of public school enrolment comes under the administration of 47 unitary division boards responsible for all public elementary and secondary education within their jurisdictions. Some schools in remote areas and other special schools are not included in these division boards. School divisions are under the jurisdiction of elected

General structure of education in Canada



boards of trustees; special schools are administered by trustees appointed by the provincial cabinet. No legal provision is made for separate schools.

The compulsory ages are 7 to 16. Elementary-secondary education lasts 12 years, and is organized into a six-year elementary segment, and three years each of junior and senior high school. However, where enrolment is low the pattern of eight elementary and four secondary years prevails.

Vocational students may take either a pre-employment commercial or industrial program. Alternatively, students may complete the university entrance program and continue for an additional year in a special commercial program, or those following the industrial program may spend half their time in the university entrance program. There is also an occupational entrance program commencing at grade 7 and continuing until grade 10 or 11, during which period students receive part of their training on the job in business or industry.

Three community colleges (Red River, Assiniboine and Keewatin) offer post-secondary terminal career programs and vocational courses at the trades level. Although no provision is made for university-transfer programs, graduates from the career programs have, in special circumstances, been granted credits applicable to a university program. Training for nurses qualifying them for the RN diploma is provided at Red River College as well as five hospital schools.

The province has three universities but only the largest, the University of Manitoba, has a faculty of graduate studies. In addition, four colleges (two associated with universities) grant degrees to students training for church ministry.

6.4.8 Saskatchewan

Two departments — education and continuing education — report through the same minister, but have separate structures. The latter was established in 1972 to handle all post-secondary matters.

The province is divided into eight education regions, and subdivided into 66 school units plus non-unit rural districts, villages, towns and cities. Local administration is based on districts, which may be set up for public and Protestant or Roman Catholic separate schools. School boards of five to eight members are elected in each district for three-year terms. Education in northern areas is administered by a department for Northern Saskatchewan.

Attendance is compulsory from 7 to 16 years, although kindergarten is available, particularly in larger centres. The traditional 12 elementary-secondary grades have been reorganized into four three-year divisions. Prospective grade 12 graduates must write standard departmental examinations.

High schools offer vocational subjects in general, industrial arts, commercial or special terminal programs, none of which qualify students for university entrance. The content of such courses is co-ordinated with the province's two community colleges and three technical institutes. Agricultural courses are given throughout the province in co-operation with the provincial agriculture department and apprenticeship training is provided in conjunction with the labour department. All nursing instruction is given by community colleges.

The University of Saskatchewan and the University of Regina operate undergraduate and graduate degree programs. In addition, four theological colleges (two associated with the University of Saskatchewan) have degree-granting power.

6.4.9 Alberta

In 1972 responsibility for education was divided between the education department and the department of advanced education and manpower, each with its own minister. The former deals with the elementary and secondary levels. The latter has jurisdiction over universities, post-secondary non-university institutions, vocational training centres, adult education provided by school boards and other public or private agencies, apprenticeship programs, federal manpower programs, and programs offered by licensed business or trade schools.

Local administration is based on the school district, although responsibility has largely been assumed by school divisions and counties. There are 60 school divisions

and counties containing 4,191 districts and 149 districts not in divisions or counties. Districts and divisions have their own school boards. Religious minorities may establish separate school districts with the same rights and obligations as public ones.

Attendance is compulsory from 6 to 15 years. Kindergarten is not part of the provincial school system although some urban centres provide it. The predominant grade pattern is: elementary (grades 1-6), junior high (grades 7-9), and senior high (grades 10-12). Secondary schools operate on the comprehensive or composite principle. Academic and a range of vocational subjects are taught.

Post-secondary technical education is offered at two institutes of technology, and at agricultural and vocational colleges. Six community colleges and three other colleges have university transfer and technology programs, adult education, community service and academic upgrading. Nursing diploma programs are given in hospital schools and four community colleges.

University of Alberta programs lead to degrees, diplomas and certificates at the undergraduate and graduate levels. A constituent college, the Collège universitaire Saint-Jean, has a bilingual program toward the first degree. A number of affiliated colleges provide up to two years of university education. The university, located in Edmonton, operates extension programs in other centres. As well, there are three other universities, Calgary, Lethbridge, and Athabasca in Edmonton, also the site of the Newman Theological College.

British Columbia

6.4.10

The province is divided into about 90 school districts; each one elects a board of trustees for a two-year term. As well as having jurisdiction over its district, a board may establish and operate regional colleges in conjunction with one or more other districts. No legal provision is made for separate schools.

Children of 7 to 15 years must attend school but participation in an optional kindergarten year is almost universal. Elementary school extends over seven years, followed by three years of junior and two years of senior high. In the senior years, employment-oriented courses are available. As well as high school courses, technical and vocational education is provided by programs run in co-operation with the federal government, and in vocational schools throughout the province.

Most of the 17 regional colleges are operated by groups of school boards. The British Columbia Institute of Technology (BCIT) is maintained by the education department. The colleges conduct a variety of career and transfer programs, although some specialize in particular fields such as art or fashion design. BCIT provides career training only. As well as in hospital schools, students may earn nursing diplomas from BCIT and several community colleges.

The largest degree-granting institution, the University of British Columbia, has undergraduate and graduate programs in most major disciplines. There are three other universities and a number of colleges, most church-related. The universities are supervised by two regulatory bodies that advise the government on curriculum and finance. Another government-appointed board makes recommendations on development, co-ordination and financing of all types of post-secondary institutions.

Yukon and Northwest Territories

6.4.11

The Yukon school system is administered by the territorial education department. The School Ordinance of 1962 recognized three types of school: public, separate and Indian. However, since the closing of the last Indian school in 1969, all native children have gone to public or separate schools. Attendance is compulsory from 7 to 16 years. Grades 1 to 12 follow the British Columbia organization and curriculum. Some secondary schools give commercial and technical courses, and advanced trades and technical training is available at the Yukon Vocational and Technical Training Centre. An aid program allows students to continue at the post-secondary level in one of the provinces.

In the Northwest Territories responsibility for education was transferred in 1969 and 1970 from the federal Indian and northern affairs department to the territorial council. The ages of compulsory attendance are 6 to 16. The region has developed its own curriculum, covering six elementary and four secondary grades. Because high

schools are located only in the larger centres, residential facilities are available for children from outside the community. Some vocational training, too, is given in urban areas. As is the practice in Yukon, the territorial council operates aid programs for students who wish to attend a post-secondary institution in another part of the country.

6.4.12 Council of Ministers of Education (Canada)

An interprovincial council of ministers of education was established to facilitate co-operative action at the policy level. The council grew out of a standing committee of ministers of education established in 1960. A memorandum was adopted in 1967 and amplified in 1974. The stated purpose of the council is to enable ministers of education to consult and act together on common interests. Provision is also made for consultation with other educational organizations. The council adheres to the principle that provincial ministries must remain autonomous; hence, no recommendation or decision is binding. Meetings are held at least twice a year. The council appoints an executive committee consisting of a chairman, vice-chairman and three other members, representing all regions of the country.

6.4.13 Maritime Provinces Higher Education Commission

During the 1960s, Nova Scotia, New Brunswick and Prince Edward Island each appointed special committees or commissions to make recommendations on university development and finance. In 1975 a Maritime provinces commission was created to advise the premiers, and through them the governments, on higher education in all three provinces. The commission dispenses operating and capital grants directly to universities and colleges in New Brunswick and Prince Edward Island. For Nova Scotia, grants are made by the education minister on the commission's recommendations.

6.5 Federal involvement in education

6.5.1 Educational services

Department of National Defence. As well as the schooling of children of service personnel in government quarters, the defence department is directly responsible for the instruction and training of those who join the armed forces.

The Canadian Forces Training System (CFTS) with headquarters in Trenton, Ont. plans, conducts and controls all recruit, trades, specialist and officer classification training. Five bases and 30 schools across Canada are under CFTS jurisdiction. CFTS trains an annual intake of about 11,000 recruits and provides continuing instruction to regular forces and reserve personnel. About 200 classification and trades qualification courses, more than 575 in-service specialty courses and 700 other courses are available. Canadian forces trades training is now accredited in most provinces. The average annual number of graduates is about 40,000.

An agreement between the defence department and the University of Manitoba permits military personnel and their dependents to work toward a degree. Manitoba is the first university to award academic credit for training courses conducted at Canadian forces schools and for service experience.

A comprehensive system of educational courses and professional development programs prepares potential officers — the three-stage Officer Career Development Program. A combination of screening and self-selection, the program can cover participants throughout their years of service until retirement.

The department finances and controls three tuition-free colleges: the Royal Military College in Kingston, Ont., Royal Roads in Victoria, BC, and the Collège militaire royal de Saint-Jean in Saint-Jean, Que. Academic courses leading to degrees in arts, science or engineering are supplemented by military studies and practical training. Close to half of all graduates receive engineering degrees. Graduates are required to serve three to five years in the armed forces. The department also assists other educational institutions in carrying out certain specialized instruction and defence research. About 1,000 cadet corps are active in Canada.

Other federal instructional programs. The Public Service Commission provides federal public servants with refresher and upgrading courses, study grants, career development opportunities, and language training. The department of the solicitor-general has an educational program for inmates of federal penal institutions. Full- and part-time instruction is offered in vocational and academic subjects, sometimes with credit given by provincial authorities. A day-parole system allows some prisoners to attend secondary schools, colleges and universities. The Canadian International Development Agency (CIDA) operates and administers a technical assistance program in developing countries.

Indirect participation

6.5.2

The growth of education, both in size and importance, made it almost inevitable that the federal government would play some role in its development even though the BNA Act restricts direct participation. Many departments have educational functions, but they tend to take a financial form. Grants for post-secondary and minority language education and sponsorship of manpower training programs have already been noted. A number of other federal bodies make significant contributions.

Department of the Secretary of State. In 1963 the education support branch of the secretary of state department was established to advise the cabinet on post-secondary education. In 1967 it became responsible for administering those parts of the Federal-Provincial Fiscal Arrangements Act related to post-secondary finance. By 1973 the branch's authority had been enlarged to include the development, formulation, implementation and review of all federal policies and programs on education. This entailed communication with provincial governments, the academic community and national organizations, and co-operation with the external affairs department to co-ordinate Canada's international efforts.

In addition to administering post-secondary adjustment payments, the branch took over the student loans plan from the finance department in December 1977. Students had received direct aid since 1939. However, not until 1964 was a comprehensive scheme adopted to assist those whose financial circumstances would prevent them from carrying on full-time post-secondary studies.

Under the plan the government guarantees loans made by chartered banks and other designated lenders to students on the basis of certificates of eligibility issued by participating provinces. The federal government carries the cost of interest payments on these loans while students continue full-time studies and for six months after. There is no age limit for borrowing. All provinces participate except Quebec, which has its own student assistance scheme. Since July 1975 the maximum loan per academic year has been \$1,800 or \$900 per semester to a total of \$9,800. The repayment period may extend up to 10 years from the time a borrower leaves the educational institution. The act provides for basic allocations to each province and also supplementary allocations to compensate for differences in relative demand based on provincial populations between the ages of 18 and 24.

The revenue department has given students further financial aid. Since 1961 they have been permitted deduction of tuition costs from taxable incomes and since 1972 education expenses up to \$50 a month have also been deductible.

Health Resources Fund Act. In 1966 the federal government inaugurated a program of financial support to the provinces to provide facilities for training professional health services personnel. The Health Resources Fund Act (1970), administered by the health and welfare department, authorized establishment of a fund to be used for training or research facilities. Up to 50% of the cost of projects approved by an advisory committee is paid to the provinces. A total of \$500 million was to be applied to costs incurred between 1966 and 1980.

Research support programs. The federal government operates a number of programs to promote research in the physical and natural sciences, social sciences, arts and humanities. The main channels for this support are the Natural Sciences and Engineering Research Council, the Medical Research Council and the Social Sciences

and Humanities Research Council. An inter-council committee co-ordinates their policies. Other agencies and departments such as the Atomic Energy Commission, Canada Mortgage and Housing Corporation and the departments of agriculture and health and welfare also contribute to research. Support may consist of capital grants, operating grants, research grants, and contracts, scholarships and awards.

Other participants. The National Museums of Canada, the National Gallery, the National Film Board and the Canadian Broadcasting Corporation contribute directly or indirectly to various school programs.

Source

6.1 - 6.5 Education, Science and Culture Division, Social Statistics Field, Statistics Canada.

Tables

... not available
 ... not appropriate or not applicable
 — nil or zero
 -- too small to be expressed
 e estimate
 p preliminary
 r revised
 certain tables may not add due to rounding

6.1 Enrolment in elementary and secondary schools, by type of institution and by province, school years 1973-74 to 1977-78

Type of institution and year	Province or territory						
	Nfld.	PEI	NS	NB	Que.	Ont.	Man.
Public							
1973-74	159,831	29,056	207,651	170,179	1,463,498	2,008,610	234,620
1974-75	158,014	28,149	204,280	166,550	1,419,997	1,994,489	229,552
1975-76	157,768	28,227 ^r	202,606	164,999	1,374,909	1,994,638	228,127
1976-77	157,686	27,903	201,279	163,317	1,318,471	1,973,140	225,698
1977-78	156,168	27,628	198,097	162,229	1,232,678	1,943,064	221,408
Private ¹							
1973-74	872	—	1,286	467	72,785	47,500	6,912
1974-75	360	—	1,372	137	86,892	51,239	6,849
1975-76	280	—	1,418	421	87,987	54,598	7,122
1976-77	293	—	1,410	393	95,000	58,226	7,642
1977-78	281	—	1,355	394	85,717	61,082	7,890
Federal ²							
1973-74	—	53	645	728	5,059	7,149	6,830
1974-75	—	57	668	782	4,875	7,465	7,303
1975-76	—	57	665	838	4,751	7,391	7,254
1976-77 ^r	—	58	646	837	4,894	7,080	7,402
1977-78	—	57	683	824	4,800	7,429	7,696
Schools for the blind and the deaf							
1973-74	138	8	472	—	981	1,283 ^r	167
1974-75	131	16	439	—	1,141	1,377 ^r	161
1975-76	127	15	452	—	1,068	1,349 ^r	168
1976-77	117	16	480	—	1,040	1,309 ^r	156
1977-78	101	14	489	—	915	1,236	159
Total							
1973-74	160,841	29,117	210,054	171,374	1,542,323	2,064,542 ^r	248,529
1974-75	158,505	28,222	206,759	167,469	1,512,905	2,054,570 ^r	243,865
1975-76	158,175	28,299 ^r	205,141	166,258	1,468,715	2,057,976 ^r	242,671
1976-77 ^r	158,096	27,977	203,815	164,547	1,419,405	2,039,755 ^r	240,898
1977-78	156,550	27,699	200,624	163,447	1,324,110	2,012,811	237,153
	Sask.	Alta.	BC	YT	NWT	Canada	
Public							
1973-74	223,798	435,738 ^r	549,019	4,957	12,627	5,499,584 ^r	
1974-75	224,176	432,177	541,575	4,903	12,504	5,416,366	
1975-76	220,973	439,354	542,680	4,975	12,496	5,371,752 ^r	
1976-77	219,191	441,070	536,237	4,866	12,906 ^r	5,281,764	
1977-78	216,716	439,804	527,769	5,394	12,717	5,143,672	
Private ¹							
1973-74	1,309	5,367	21,421	—	—	157,919	
1974-75	1,853	5,541	21,055	—	—	175,298	
1975-76	1,453	5,651	23,071	—	—	182,001	
1976-77	1,573	6,070	23,318	—	—	193,925	
1977-78	1,707	6,018	23,691	—	—	188,135	
Federal ²							
1973-74	5,290	3,661	3,083	—	—	37,064 ^a	
1974-75	5,309	3,418	3,013	—	—	37,511 ^a	
1975-76	5,530	3,719	2,258	—	—	37,087 ^a	
1976-77 ^r	6,399	3,897	1,974	—	—	37,569 ^a	
1977-78	6,984	4,018	2,560	—	—	35,051	
Schools for the blind and deaf							
1973-74	159	159	257	—	—	3,624 ^r	
1974-75	155	171	293	—	—	3,884 ^r	
1975-76	150	176	278	—	—	3,783 ^r	
1976-77	136	185	244	—	—	3,683 ^r	
1977-78	118	188	195	—	—	3,415	
Total							
1973-74	230,556	444,925 ^r	573,780	4,957	12,627	5,698,191 ^a	
1974-75	231,493	441,307	565,936	4,903	12,504	5,633,059 ^a	
1975-76	228,106	448,900	568,287	4,975	12,496	5,594,623 ^a	
1976-77 ^r	227,299	451,222	561,773	4,866	12,906	5,516,941 ^a	
1977-78	225,525	450,028	554,215	5,394	12,717	5,374,322 ^a	

¹Private kindergartens and nursery schools not included.
²Provincial figures are for federal schools for Indians and Inuit.
^aCanada total also includes Department of National Defence schools overseas.

6.2 Full-time enrolment in community colleges and public trade schools, and in vocational programs in business and industry, by province, 1976-77 and 1977-78

Item	Province or territory							
	Newfoundland		Prince Edward Island		Nova Scotia		New Brunswick	
	1976-77	1977-78	1976-77	1977-78	1976-77	1977-78	1976-77	1977-78
Full-time enrolment								
Community colleges ¹								
Post-secondary level								
Career programs	2,009	2,050	752	760	2,813 ^a	2,690 ^a	1,454	1,564
University transfer programs	—	—	—	—	194	187	—	—
Trades-level vocational ²								
Pre-employment courses	1,154	..	594	..	543	..	3,210	..
Skill upgrading courses	176	..	—	..	18	..	1,111	..
Secondary level pre-vocational								
Academic upgrading courses	355	..	589	..	—	..	2,073	..
Second language courses	—	..	—	..	—	..	—	..
Total, community colleges	3,694	..	1,935	..	3,568	..	7,848	..
Public trade schools								
Trades-level vocational ²								
Pre-employment courses	4,470	..	893	..	7,799	..	100	..
Skill upgrading courses	43	..	—	..	727	..	167	..
Secondary level pre-vocational								
Academic upgrading courses	1,343	..	—	..	3,688	..	—	..
Second language courses	—	..	—	..	—	..	—	..
Total, public trade schools	5,856	..	893	..	12,214	..	267	..
Business and industry								
Registered apprentices	3,919	3,938	535	557	5,719	5,527	6,282	5,920
Canada Manpower Industrial Training Program	2,584	2,864	747	1,021	3,836	4,625	3,684	4,882
Total, business and industry	6,503	6,802	1,282	1,578	9,555	10,152	9,966	10,802
Total, all training	16,053	..	4,110	..	25,337	..	18,081	..
	Quebec		Ontario		Manitoba		Saskatchewan	
	1976-77	1977-78	1976-77	1977-78	1976-77	1977-78	1976-77	1977-78
Full-time enrolment								
Community colleges ¹								
Post-secondary level								
Career programs	56,698	61,293	58,919	60,994	3,434	3,154	2,387	2,415
University transfer programs	66,020	72,510	—	—	—	—	—	—
Trades-level vocational ²								
Pre-employment courses	—	—	29,553	..	3,940	..	2,750	..
Skill upgrading courses	—	—	1,291	..	2,296	..	186	..
Secondary level pre-vocational								
Academic upgrading courses	—	—	24,330	..	3,993	..	1,694	..
Second language courses	—	—	6,940	..	275	..	70	..
Total, community colleges	122,718	133,803	121,033	..	13,938	..	7,087	..
Public trade schools								
Trades-level vocational								
Pre-employment courses	12,996	..	131	..	—	—	76	..
Skill upgrading courses	9,221	..	—	..	—	—	—	..
Secondary level pre-vocational								
Academic upgrading courses	16,232	..	31	..	—	—	90	..
Second language courses	461	..	—	..	—	—	23	..
Total, public trade schools	38,910	..	162	..	—	—	189	..
Business and industry								
Registered apprentices	21,000 ^e	27,948	35,705	37,010	3,648	3,794	4,927	6,033
Canada Manpower Industrial Training Program	11,983	19,486	16,612	15,593	2,409	4,316	2,569	2,804
Total, business and industry	32,983	47,434	128,813 ^a	137,886 ^a	6,057	8,110	7,496	8,837
Total, all training	194,611	..	250,008	..	19,995	..	14,772	..
	Alberta		British Columbia		Yukon		Northwest Territories	
	1976-77	1977-78	1976-77	1977-78	1976-77	1977-78	1976-77	1977-78
Full-time enrolment								
Community colleges ¹								
Post-secondary level								
Career Programs	14,009	12,578	8,881	9,401	—	—	151,356	156,899
University transfer programs	2,548	2,095	7,757	7,685	—	—	76,519	82,477
Trades-level vocational ²								
Pre-employment courses	1,965	..	8,881	..	—	—	52,590	..
Skill upgrading courses	734	..	3,776	..	—	—	9,588	..
Secondary level pre-vocational								
Academic upgrading courses	695	..	5,173	..	—	—	38,902	..
Second language courses	28	..	1,093	..	—	—	8,406	..
Total, community colleges	19,979	..	35,561	..	—	—	337,361	..

6.2 Full-time enrolment in community colleges and public trade schools, and in vocational programs in business and industry, by province, 1976-77 and 1977-78 (concluded)

Item	Province or territory									
	Alberta		British Columbia		Yukon		Northwest Territories		Canada	
	1976-77	1977-78	1976-77	1977-78	1976-77	1977-78	1976-77	1977-78	1976-77	1977-78
Full-time enrolment (concluded)										
Public trade schools										
Trades-level vocational										
Pre-employment courses	2,958	..	6,941	..	257	..	257	..	36,878	..
Skill upgrading courses	1,794	..	1,872	..	—	..	163	..	13,987	..
Secondary level pre-vocational										
Academic upgrading courses	4,293	..	620	..	264	..	530	..	27,091	..
Second language courses	559	..	—	..	—	..	7	..	1,050	..
Total, public trade schools	9,604	..	9,433	..	521	..	957	..	79,006	..
Business and industry										
Registered apprentices	20,700	23,620	19,569	19,900 ^e	105	128	482	559	122,591	134,934
Canada Manpower Industrial Training Program	3,417	3,152	12,293	10,093	365	465	289	397	60,788	69,698
Total, business and industry	24,117	26,772	31,862	29,993	470	593	771	956	259,875 ^a	289,915 ^a
Total, all training	53,700	..	76,856	..	991	..	1,728	..	676,242	..

¹Includes hospital schools of nursing.

²Includes Nova Scotia Teachers' College: students of Cape Breton College technical campus also shown in university enrolment statistics.

³Excludes registered apprentices attending formal classes for short periods, since they would be shown as well with registered apprentices under "Business and industry".

⁴Includes an additional 76,496 in Ontario Training in Business and Industry Program.

⁵Includes an additional 85,283 in Ontario Training in Business and Industry Program.

6.3 Full- and part-time enrolment in universities, by level and province, 1975-76 to 1977-78¹

Province and year		Undergraduate ^a		Graduate ^a		Non-university ^a	
		Full-time	Part-time	Full-time	Part-time	Full-time	Part-time
Newfoundland	1975-76	5,736	3,008	445	280	—	—
	1976-77	6,200	2,928	435	297	—	—
	1977-78	6,291	3,019	473	290	—	—
Prince Edward Island	1975-76	1,463	887	—	—	—	—
	1976-77	1,478	854	—	—	—	—
	1977-78	1,542	803	—	—	—	—
Nova Scotia	1975-76	16,422	5,088	1,125	687	417	—
	1976-77	16,635	5,254	1,253	854	436	—
	1977-78	16,691	5,377	1,306	1,001	—	—
New Brunswick	1975-76	10,476	4,925	508	411	183	106
	1976-77	10,393	3,947	513	395	156	111
	1977-78	10,583	4,031	497	461	15	2
Quebec	1975-76	65,578	51,898	9,213	8,421	102	100
	1976-77	66,561	56,391	9,414	8,500	99	88
	1977-78	69,756	67,171	9,879	9,161	169	1,792
Ontario	1975-76	140,252	62,042	16,153	11,973	892	73
	1976-77	144,481	60,721	16,122	12,468	900	45
	1977-78	140,000	66,581	15,729	12,376	877	48
Manitoba	1975-76	16,945	9,329	1,486	1,244	—	—
	1976-77	16,370	10,515	1,606	1,355	—	—
	1977-78	15,905	10,587	1,570	1,417	—	—
Saskatchewan	1975-76	13,389	6,100	676	682	285	144
	1976-77	13,576	5,452	785	662	603	1,336
	1977-78	13,540	5,551	814	684	623	1,518
Alberta	1975-76	28,879	6,579	2,876	1,784	—	410
	1976-77	29,032	6,607	3,058	1,699	307	345
	1977-78	28,611	7,235	3,035	1,680	311	190
British Columbia	1975-76	28,080	6,994	3,257	1,478	661	611
	1976-77	27,962	8,577	3,399	1,455	—	101
	1977-78	27,390	9,057	3,248	1,561	1	99
Total	1975-76	327,220	156,850	35,739	26,960	2,540	1,444
	1976-77	332,688	161,246	36,585	27,685	2,501	2,026
	1977-78	330,309	179,412	36,551	28,631	1,996	3,649

¹Excludes 5,334 interns and residents in 1975-76, 5,168 in 1976-77 and 5,329 in 1977-78.

²Bachelors and first professional degrees, diplomas and certificates, auditors, special students.

³Masters, doctorates, diplomas and certificates, qualifying and special students.

⁴Diplomas, certificates.

6.4 Graduate-level degrees awarded by Canadian universities, by field of study, region and percentage distribution by sex, calendar years, 1977 and 1978P

Degree and field of study	Region and year					
	Atlantic provinces		Quebec		Ontario	
	1977	1978	1977	1978	1977	1978
Master						
Education	234	326	456	482	1,265	1,330
Fine and applied arts	9	5	38	36	78	67
Humanities	125	108	462	501	1,139	1,117
Social sciences	255	229	1,078	1,243	2,500	2,381
Agriculture and biological sciences	42	36	123	143	251	218
Engineering and applied sciences	41	47	295	317	593	577
Health professions	7	33	154	161	137	160
Mathematics and physical sciences	55	65	236	240	452	398
Total	768	849	2,842	3,123	6,415	6,248
Doctorate						
Education	—	1	13	15	76	69
Fine and applied arts	—	—	3	1	8	6
Humanities	10	11	45	51	164	162
Social sciences	8	11	69	94	202	234
Agriculture and biological sciences	14	8	31	43	81	78
Engineering and applied sciences	5	6	47	50	103	118
Health professions	2	4	42	41	44	52
Mathematics and physical sciences	26	27	60	73	197	189
Total	65	68	310	368	875	908
	Western provinces		Canada			
	1977	1978	1977	M %	F %	1978 M % F %
Master						
Education	638	672	2,593	61	39	2,810 61 39
Fine and applied arts	43	53	168	48	52	161 48 52
Humanities	280	309	2,006	53	47	2,035 52 48
Social sciences	714	704	4,547	73	27	4,557 71 30
Agriculture and biological sciences	224	237	640	69	31	634 71 30
Engineering and applied sciences	199	209	1,128	97	4	1,150 94 6
Health professions	65	70	363	39	61	424 42 58
Mathematics and physical sciences	187	171	930	86	14	874 84 16
Total	2,350	2,425	12,375	69	31	12,645 67 33
Doctorate						
Education	84	71	173	76	24	156 75 25
Fine and applied arts	—	—	11	73	27	7 29 71
Humanities	37	35	256	66	34	259 70 31
Social sciences	78	80	357	76	24	419 76 24
Agriculture and biological sciences	102	109	228	89	11	238 83 17
Engineering and applied sciences	48	50	203	99	1	224 97 3
Health professions	17	28	105	74	26	125 78 22
Mathematics and physical sciences	86	94	369	91	10	383 91 9
Total	452	467	1,702	82	18	1,811 82 18

6.5 Diplomas and certificates awarded by Canadian universities, by level and field of study, region and percentage distribution by sex, calendar years, 1977 and 1978P

Level and field of study	Region and year					
	Atlantic provinces		Quebec		Ontario	
	1977	1978	1977	1978	1977	1978
Undergraduate						
Education	116	85	2,542	4,455	314	243
Fine and applied arts	27	28	12	21	114	129
Humanities	2	2	342	330	171	213
Social sciences	197	191	1,174	2,032	628	691
Agriculture and biological sciences	—	1	28	43	141	130
Engineering and applied sciences	102	167	28	37	318	359
Health professions	115	102	517	925	443	302
Mathematics and physical sciences	2	1	5	9	34	47
Total	561	577	4,648	7,852	2,163	2,114
Graduate						
Education	57	50	185	84	1	55
Fine and applied arts	—	—	2	3	5	6
Humanities	—	—	9	49	26	34
Social sciences	4	10	265	781	147	137
Agriculture and biological sciences	—	—	5	8	18	16
Engineering and applied sciences	—	—	11	11	—	2
Health professions	—	—	153	184	100	89
Mathematics and physical sciences	—	—	14	10	—	—
Total	61	60	644	1,130	297	339

6.5 Diplomas and certificates awarded by Canadian universities, by level and field of study, region and percentage distribution by sex, calendar years, 1977 and 1978P (concluded)

Level and field of study	Region and year						
	Western provinces		Canada				
	1977	1978	1977	M %	F %	1978	M % F %
Undergraduate							
Education	1,291	1,194	4,263	44	56	5,977	40 60
Fine and applied arts	21	21	174	30	70	199	28 72
Humanities	64	65	579	34	66	610	35 65
Social sciences	77	107	2,076	62	38	3,021	65 35
Agriculture and biological sciences	202	89	371	86	14	263	80 20
Engineering and applied sciences	2	3	450	97	3	566	96 4
Health professions	218	173	1,293	11	89	1,502	11 89
Mathematics and physical sciences	14	14	55	84	16	71	86 14
Total	1,889	1,666	9,261	47	53	12,209	46 54
Graduate							
Education	253	230	496	53	47	419	47 53
Fine and applied arts	—	—	7	57	43	9	33 67
Humanities	2	4	37	51	49	87	44 56
Social sciences	2	1	418	72	28	929	80 20
Agriculture and biological sciences	2	1	25	64	36	25	76 24
Engineering and applied sciences	6	3	17	100	—	16	94 6
Health professions	2	1	255	67	33	274	67 33
Mathematics and physical sciences	1	2	15	80	20	12	100 —
Total	268	242	1,270	63	37	1,771	69 31

6.6 Participation in continuing education courses per 1,000 population¹ by type of institution and by province, 1974-75 to 1977-78

Province or territory and year		School boards, departments of education		Department of education correspondence courses		Community colleges ^a		Universities		Total
		Part-time credit	Non-credit	Part-time credit	Non-credit	Part-time credit	Non-credit	Part-time credit	Non-credit	
Newfoundland	1974-75	10.6	17.4	—	—	10.6	17.5	19.9	8.0	83.9
	1975-76	10.6	16.8	—	—	6.9	15.4	17.8	7.9 ^r	75.5
	1976-77	7.0	10.9	—	—	7.6	21.6	17.0	11.4	75.5
	1977-78	11.1	21.8	—	—	..	31.0	21.8	9.4	..
Prince Edward Island	1974-75	8.0	45.4	—	—	11.6	4.6	27.8	1.9	99.4
	1975-76 ^r	—	—	—	—	10.5	19.0	28.8	1.0	59.4
	1976-77	—	—	—	—	8.2	22.0	28.0	3.2	61.5
	1977-78	—	—	—	—	..	17.7	24.8	1.1	..
Nova Scotia	1974-75	8.6	31.4	1.3	0.2	7.3	3.4	20.1	12.9	85.3
	1975-76	3.3	42.1	2.4	0.2	6.4	3.8	23.6	11.5	93.4 ^r
	1976-77	2.7	38.5	1.3	0.2	5.9	4.1	21.9	17.8	92.4
	1977-78	2.7	42.1	1.3	0.2	..	3.5	24.2	17.2	..
New Brunswick	1974-75	2.4	21.5	1.0	—	6.0	6.7	21.7	8.7	68.1
	1975-76	1.9	16.2	0.8	—	4.6	4.5	23.1	10.4 ^r	61.6
	1976-77	3.4	15.5	0.8	—	4.8	0.6	19.8	9.6	54.6
	1977-78	2.6	19.1	0.6	—	..	1.5	22.4	11.4	..
Quebec	1974-75 ^r	13.2	31.1	0.8	0.8	—	5.2	21.1	9.3	81.6
	1975-76 ^r	12.9	30.5	1.0	0.6	—	5.8	25.2	9.5	85.4
	1976-77 ^p	13.0	34.2	1.1	1.1	—	7.7	27.1	9.3	93.5
	1977-78	13.6	39.0	1.3	1.0	..	14.1	32.3	10.2	..
Ontario	1974-75	4.0	27.8	9.6	—	16.5	16.8	23.8	12.9 ^r	111.4 ^r
	1975-76	5.0	36.1	10.1	—	15.4	18.3	25.1	11.8 ^r	121.8 ^r
	1976-77	4.4	39.3	12.2	—	14.2	17.0	25.5	12.3	124.9
	1977-78	3.8	40.0	10.5	—	..	18.4	24.9	11.6	..
Manitoba	1974-75	1.1	18.1	2.4	..	4.6	15.2	28.3	14.9 ^r	84.5 ^r
	1975-76	1.3	25.2	2.3	0.2	5.5	10.0	27.7	14.0 ^r	86.1 ^r
	1976-77	1.1	26.3	2.8	..	4.3	8.8	30.4	13.7	87.5
	1977-78	1.6	31.0	2.7	..	..	10.4	32.8	11.5	..
Saskatchewan	1974-75	1.6	11.8	2.2	—	4.2 ^r	37.6	22.0	19.3 ^r	98.7
	1975-76	—	—	3.0	0.1	8.2	84.6	22.7	23.8	142.4
	1976-77	—	—	2.2	..	12.1	98.7	21.9	22.0	157.0
	1977-78	—	—	1.9	0.1	..	94.3	22.2	30.3	..
Alberta	1974-75	4.3	30.9	6.5	0.8	6.7	24.1	15.0	28.3	116.7 ^r
	1975-76	7.9	49.7	6.9	1.3	8.0	36.3	18.1	31.6	159.8
	1976-77	9.7	48.2	5.6	1.3	7.8	40.2 ^p	17.9	34.5	165.3 ^r
	1977-78	10.5	57.9	7.0	1.8	..	29.1	22.8	41.6	..
British Columbia	1974-75	4.3	49.7	1.9	1.8	12.1	26.6	10.3	19.8	126.5
	1975-76	3.1	54.2	2.2	2.0	15.9	39.0	10.3	20.3	147.0
	1976-77	2.7	59.3	2.3	0.7	17.2	48.8	11.6	20.9	163.5
	1977-78	4.0	54.4	1.7	1.2	..	60.2	13.4	22.3	..

6.6 Participation in continuing education courses per 1,000 population¹ by type of institution and by province, 1974-75 to 1977-78 (concluded)

Province or territory and year	School boards, departments of education		Department of education corres- pondence courses		Community colleges ²		Universities		Total
	Part-time credit	Non- credit	Part-time credit	Non- credit	Part-time credit	Non- credit	Part-time credit	Non- credit	
Yukon and Northwest Territories									
1974-75	1.3	22.2	—	—	17.6	7.8	—	—	48.9
1975-76	3.7 ^r	73.9 ^r	—	—	9.9	12.1	—	—	99.6
1976-77	12.4	29.1	—	—	4.5	20.0	—	—	66.0
1977-78	4.4	25.3	—	—	..	16.4	—	—	..
Canada									
1974-75 ^r	6.6	30.1	4.6	0.5	9.0	15.2	20.7	13.9	100.7
1975-76 ^r	6.8	34.8	5.0	0.5	9.1	19.9	22.7	14.0	112.7
1976-77	6.6	37.1	5.7	0.5	8.9	21.9	23.4	14.7	118.8
1977-78	6.8	39.6	5.2	0.6	..	24.6	25.4	15.5	..

¹Out-of-school population 15 years of age and over as of June 1, 1974-75 to 1977-78.

²Includes institutes of technology, community colleges, colleges of applied arts and technology, trade and vocational schools and collèges d'enseignement général et professionnel (CEGEPs) of Quebec.

6.7 Expenditures on education by level of study, and by province, 1976-77 and 1977-78 (million dollars)

Year and level of study	Province or region						
	Nfld.	PEI	NS	NB	Que.	Ont.	Man.
1976-77							
Elementary and secondary	209.7	45.2	299.1	241.7	3,074.0	3,543.2	400.0
Post-secondary							
Non-university	11.5	3.2	17.4	8.3	492.7	318.6	15.6
University	66.1	8.7	112.6	77.1	718.9	1,177.3	137.2
Vocational and occupational training	37.0	9.9	55.2	34.1	220.9	310.6	43.2
Total	324.3	67.0	484.3	361.2	4,506.5	5,349.7	596.0
1977-78 ^e							
Elementary and secondary	220.7	50.5	320.9	285.3	3,298.4	4,123.0	466.6
Post-secondary							
Non-university	¹	¹	20.4	8.9	616.8	352.4	16.7
University	¹	¹	136.3	90.8	817.6	1,311.5	149.1
Vocational and occupational training	38.6	11.0	50.8	38.6	253.3	370.8	45.5
Total	344.7	77.0	528.4	423.6	4,986.1	6,157.7	677.9
	Sask.	Alta.	BC	YT	NWT	Overseas and undistributed	Total
1976-77							
Elementary and secondary	379.9	759.0	986.0	12.3	32.6	14.9	9,997.6
Post-secondary							
Non-university	17.5	85.7	113.3	0.5	--	0.2	1,084.5
University	117.5	261.0	267.4	0.4	—	32.5	2,976.7
Vocational and occupational training	30.6	77.9	98.1	2.6	6.6	28.4	955.1
Total	545.5	1,183.6	1,464.8	15.8	39.2	76.0	15,013.9
1977-78 ^e							
Elementary and secondary	411.7	1,009.5	1,106.4	..	..	71.3	11,364.3
Post-secondary							
Non-university	14.0	88.7	128.1	..	..	1.2	1,261.2
University	130.7	287.6	288.3	..	..	36.6	3,335.4
Vocational and occupational training	43.4	119.8	105.0	..	..	42.6	1,119.4
Total	599.8	1,505.6	1,627.8	..	..	151.7	17,080.3

¹Confidential.

6.8 Sources of funds for education at all levels, 1972-73 to 1977-78 (million dollars)

Year	Sources of funds			Fees	Other sources	Total
	Government	Provincial ¹	Municipal			
	Federal					
1972-73 ^r	943.8	5,252.0	1,785.5	417.3	277.1	8,675.7
1973-74 ^r	984.8	5,838.3	1,949.2	439.8	427.3	9,639.4
1974-75 ^r	1,052.0	7,026.6	2,079.8	474.5	430.8	11,063.7
1975-76	1,197.9	8,396.7	2,433.2	534.2	449.7	13,011.7
1976-77	1,360.6	9,831.3	2,809.9	579.8	432.3	15,013.9
1977-78	1,610.5	11,224.3	3,131.9	612.9	500.7	17,080.3

¹Includes federal transfers to provinces for post-secondary education and for the minority language program.

6.9 Bachelors' and first professional degrees awarded by Canadian universities, by field of study, province, and percentage by sex, calendar years, 1976, 1977 and 1978

Field of study	Province and year											
	PEI			NS			NB			Que.		
	1976	1977	1978	1976	1977	1978	1976	1977	1978	1976	1977	1978
Agriculture	—	—	—	—	—	—	—	—	—	—	—	—
Architecture	361	370	376	29	36	40	800	612	534	190	207	245
Arts	—	—	—	1,273	1,330	1,301	—	—	—	160	207	325
Commerce and business	—	—	—	—	—	—	—	—	—	214	226	240
administration	59	74	92	505	555	608	234	244	239	4,133	4,917	16,647
Dentistry	—	—	—	29	29	26	—	—	—	2,270	2,597	2,808
Education	582	614	609	919	837	790	959	750	735	146	141	137
Engineering	56	48	57	196	177	230	127	150	157	2,945	3,320	3,984
Environmental studies	—	6	3	78	38	51	—	—	—	1,022	1,194	1,885
Fine and applied arts	—	—	—	76	77	90	25	30	21	39	57	79
Forestry	—	—	—	—	—	—	26	26	47	420	416	518
Household science	—	—	—	97	91	61	25	14	12	—	—	—
Journalism	—	—	—	—	—	—	69	70	77	116	151	123
Law	—	—	—	145	144	143	—	—	—	71	79	81
Library science	—	—	—	—	—	—	—	—	—	687	792	871
Medicine	102	112	109	92	90	92	—	—	—	8	8	—
Music	—	—	—	14	11	24	27	32	26	836	843	880
Nursing	48	38	44	87	96	87	78	89	102	365	417	409
Optometry	—	—	—	—	—	—	—	—	—	117	125	117
Pharmacy	—	—	—	46	51	60	—	—	—	245	247	237
Physical and health education	41	49	49	138	133	134	108	105	122	52	58	58
Rehabilitation medicine	—	—	—	—	—	—	—	—	—	245	247	237
Religion and theology	17	16	28	16	17	15	3	4	6	651	684	1,341
Science	183	200	171	605	588	560	241	250	230	258	279	282
Social work	34	30	39	—	—	—	18	28	26	215	182	204
Veterinary medicine	—	—	—	—	—	—	—	—	—	282	399	398
Other	—	—	—	—	—	—	—	—	—	2,668	2,078	2,822
Total	1,483	1,557	1,577	4,345	4,300	4,354	2,740	2,406	2,343	344	422	467
	—	—	—	—	—	—	—	—	—	67	115	111
	—	—	—	—	—	—	—	—	—	48	60	85
	—	—	—	—	—	—	—	—	—	11	70	282
	—	—	—	—	—	—	—	—	—	16,828	19,258	20,669
	—	—	—	—	—	—	—	—	—	38,911	40,278	39,714

Field of study	Canada											
	1976			1977			1978			1976		
	M	F	%	M	F	%	M	F	%	M	F	%
Agriculture	—	—	—	—	—	—	—	—	—	—	—	—
Architecture	60	62	69	—	—	—	—	—	—	74	26	74
Arts	1,395	1,406	1,281	1,140	1,154	1,187	1,596	1,596	1,740	86	15	597
Commerce and business	—	—	—	—	—	—	—	—	—	46	54	28,801
administration	256	290	334	543	554	663	346	427	492	80	20	7,114
Dentistry	29	27	23	29	29	26	—	—	—	90	10	459
Education	854	945	1,000	1,837	2,002	2,029	904	928	958	33	65	16,920
Engineering	148	170	220	297	371	420	186	196	216	98	2	4,445
Environmental studies	121	14	15	2	4	4	—	—	—	27	24	271
Fine and applied arts	120	125	107	77	95	75	124	146	132	33	63	1,679
Forestry	—	—	—	55	75	66	78	81	61	86	4	282
Household science	—	—	—	83	81	83	112	95	95	1,235	98	1,110
Journalism	123	100	90	—	—	—	—	—	—	1,977	78	2,832
Law	107	125	136	154	124	170	218	238	222	54	48	2,231
Library science	—	—	—	—	—	—	—	—	—	2,643	72	2,832
Medicine	121	115	110	244	254	257	98	92	89	75	94	2,231
Music	34	29	47	44	42	40	98	73	81	42	58	808
	—	—	—	—	—	—	—	—	—	2,669	38,911	40,278
	—	—	—	—	—	—	—	—	—	39,714	—	—

Field of study	Province and year																					
	Man.			Sask.			Alta.			BC		Canada										
	1976	1977	1978	1976	1977	1978	1976	1977	1978	1976	1977	1978	1976	M %	F %	M %	F %	1978	M %	F %		
Nursing	87	65	89	80	82	76				85	114	122	1,362	69	31	97	1,450	3	97	1,379	3	97
Optometry	—	—	—	—	—	—								92	28	98	72	98	72	95	37	95
Pharmacy	40	44	46	63	62	51				92	81	97	710	42	58	719	41	60	718	40	60	
Physical and health education	83	90	81	87	72	90				263	244	199	2,787	55	45	2,855	52	48	2,884	53	48	
Rehabilitation medicine	24	35	27	2	5	7				34	46	52	581	8	92	685	8	92	673	8	92	
Religion and theology	84	92	75	22	21	33				22	13	18	647	60	40	816	60	40	796	59	42	
Science	506	471	470	320	260	297				823	800	878	9,920	70	30	10,162	68	32	10,598	66	34	
Social work	92	76	67	48	50	56				77	120	58	883	32	68	1,038	28	72	1,054	26	74	
Veterinary medicine	—	—	—	61	60	66				—	—	—	224	76	24	240	70	30	244	71	29	
Other	29	43	63	6	11	9				28	42	48	152	52	48	215	55	46	482	25	75	
Total	4,298	4,406	4,460	2,996	2,925	3,103				5,295	5,435	5,769	83,292	54	46	87,356	52	48	89,148	52	48	

6.10 Students' in continuing education courses by type of institution and by province, 1973-74 to 1977-78

Province or territory and year	School boards, departments of education		Department of education courses		Community colleges ²		Universities		Total
	Part-time credit	Non-credit	Part-time credit	Non-credit	Part-time credit	Non-credit	Part-time credit	Non-credit	
Newfoundland	1973-74	2,292	2,259	—	2,855	5,094	6,327	2,423	21,250
	1974-75	3,269	5,370	—	—	2,855	5,094	6,327	24,23
	1975-76	3,330	5,261	—	—	2,176	4,835	5,773	25,949
	1976-77	2,218	3,456	—	—	2,405	5,377	6,836	23,648
	1977-78	3,586	7,067	—	—	..	10,038	7,055	23,887
Prince Edward Island	1973-74	670	3,582	—	—	826	365	2,471	8,053
	1974-75	581	3,290	—	—	394	334	2,017	7,203
	1975-76	—	—	—	—	770	1,392	2,111	4,350
	1976-77	—	—	—	—	603	1,616	2,056	4,350
	1977-78	—	—	—	—	..	1,320	1,846	4,512
Nova Scotia	1973-74	4,164	14,580	1,104	—	2,821	9,252	9,252	38,480
	1974-75	4,384	16,031	680	121	3,735	1,746	818	43,546
	1975-76	1,724	21,760	1,238	127	3,303	1,949	12,200	48,230
	1976-77	1,397	19,969	676	83	3,052	2,140	9,259	47,929
	1977-78	1,442	22,245	697	103	..	1,840	12,764	..
New Brunswick	1973-74	1,208	7,721	402	—	1,670	1,410	8,963	24,278
	1974-75	976	8,783	426	—	2,455	2,730	2,730	27,802
	1975-76	787	6,766	322	—	1,937	1,871	9,610	25,647
	1976-77	1,434	6,448	318	—	2,007	2,64	8,212	23,995
	1977-78	1,102	8,056	258	—	..	622	9,441	22,678

6.10 Students¹ in continuing education courses by type of institution and by province, 1973-74 to 1977-78 (concluded)

Province or territory and year	School boards, departments of education		Department of education correspondence courses		Community colleges ²		Universities		Total
	Part-time credit	Non-credit	Part-time credit	Non-credit	Part-time credit	Non-credit	Part-time credit	Non-credit	
Quebec	1973-74	50,748	116,243	1,624	2,236	21,048	73,256	40,033	305,188
	1974-75	53,064	124,362	3,126	3,127	20,970	84,548	37,417	326,614
	1975-76	52,292	123,079	4,011	2,259	23,522	101,583	38,243	344,989
	1976-77	52,902	138,992	4,431	4,359	31,275	110,062	37,954	379,975
	1977-78	56,306	161,463	5,247	4,227	58,348	133,436	42,150	406,370
Ontario	1973-74	22,480	128,428	45,833	—	58,480	123,815	63,068	306,370
	1974-75	21,178	146,737	50,501	—	89,099	125,908	68,286	358,953
	1975-76	26,859	193,458	54,107	—	97,932	134,431	62,937	381,963
	1976-77	23,429	211,279	65,504	—	91,697	137,269	66,471	381,963
	1977-78	20,854	219,696	57,860	—	100,974	136,675	63,457	381,963
Manitoba	1973-74	822	9,932	1,495	—	1,930	17,389	8,106	47,688
	1974-75	721	11,767	1,531	5	2,963	18,384	9,704	54,921
	1975-76	832	16,510	1,498	167	3,596	18,164	9,176	56,477
	1976-77	730	17,330	1,853	38	2,853	19,997	9,035	57,596
	1977-78	1,088	20,798	1,828	35	6,939	21,966	7,688	57,596
Saskatchewan	1973-74	1,380	5,531	1,259	6	2,867	11,550	13,146	36,842
	1974-75	902	6,823	1,273	—	2,427	12,761	11,211	37,776
	1975-76	—	—	1,771	62	4,873	49,904	13,415	84,050
	1976-77	—	—	1,278	11	7,174	58,320	12,958	92,773
	1977-78	—	—	1,146	51	56,248	13,250	18,097	92,773
Alberta	1973-74	5,586	24,227	5,160	421	5,029	12,895	15,159	98,878
	1974-75	4,661	33,704	7,118	859	7,329	16,348	30,803	127,099
	1975-76	8,919	55,938	7,747	1,471	9,003	20,317	35,498	179,756
	1976-77	11,368	56,442	6,525	1,579	47,071	20,987	40,353	193,420
	1977-78	12,644	69,464	8,427	2,133	34,845	27,368	49,887	193,420
British Columbia	1973-74	9,314	88,345	5,125	2,215	36,159	12,634	28,487	200,548
	1974-75	7,023	80,362	3,011	2,872	19,607	16,639	32,033	204,514
	1975-76	5,124	88,754	3,572	3,275	63,986	16,837	33,274	240,938
	1976-77	4,480	97,418	3,759	1,092	26,116	19,078	34,400	240,938
	1977-78	6,682	91,403	2,939	2,105	28,217	22,503	37,528	268,712
Yukon and Northwest Territories	1973-74	242	1,771	—	—	692	318	—	3,023
	1974-75	42	709	—	—	563	251	—	1,365
	1975-76	118 ¹	2,381 ¹	—	—	320	390	—	1,365
	1976-77	436	1,027	—	—	160	704	—	3,209
	1977-78	164	950	—	—	616	—	—	2,327
Canada	1973-74	98,906	402,619	61,602	4,878	101,625	280,816	194,448	1,290,598
	1974-75	96,801	437,938	67,666	6,984	130,426	301,867	202,225	1,465,324
	1975-76	99,985	513,907	74,266	7,361	134,345	334,231	205,986	1,663,257
	1976-77	98,384	552,361	84,344	7,162	131,922	347,369	218,281	1,765,784
	1977-78	103,868	601,142	78,402	8,654	372,910	386,304	235,857	1,765,784

¹Number of individuals enrolled in school board credit courses and in non-credit programs for all institutions are estimates based on course registrations.²Includes institutes of technology, community colleges, colleges of applied arts and technology, trade and vocational schools and colleges d'enseignement général et professionnel (CEGEPs) of Quebec.

6.11 Registration in continuing education courses by type of institution and by province, 1974-75 to 1977-78

Province or territory and year	School boards, departments of education			Department of education correspondence courses			Community colleges ¹			Universities			Total
	1974-75	1975-76	1976-77	Part-time credit	Non-credit		Part-time credit	Non-credit		Part-time credit	Non-credit		
Newfoundland	1974-75	9,807	8,055	—	—	—	4,360	7,207	8,169	3,288	3,288	40,886	
	1975-76	9,990	7,891	—	—	—	2,888	6,428	8,777	3,289	3,289	39,263	
	1976-77	6,655	5,184	—	—	—	3,198	9,092	8,729	4,781	4,781	37,639	
	1977-78	10,757	10,600	—	—	—	..	13,350	9,383	4,064	4,064	..	
Prince Edward Island	1974-75	2,322	4,935	—	—	—	1,121	445	2,683	183	183	11,689	
	1975-76	—	—	—	—	—	1,024	1,852	2,679	102	102	5,657	
	1976-77	—	—	—	—	—	802	2,150	2,592	315	315	5,855	
	1977-78	—	—	—	—	—	..	1,756	2,455	113	113	..	
Nova Scotia	1974-75	8,767	24,046	1,020	181	190	4,964	2,323	13,635	8,774	8,774	63,710	
	1975-76	3,447	32,640	1,844	190	4,390	2,591	2,591	15,069	7,886	7,886	68,057	
	1976-77	2,794	29,953	1,056	131	1,056	4,060	2,846	15,243	12,314	12,314	68,397	
	1977-78	2,883	33,368	1,045	154	..	..	2,447	16,976	12,121	12,121	..
New Brunswick	1974-75	1,952	13,175	852	—	—	3,265	3,632	11,794	4,740	4,740	39,410	
	1975-76	1,575	10,149	447	—	—	2,581	2,489	16,530	5,791	5,791	39,562	
	1976-77	2,867	9,672	465	—	—	2,670	351	13,396	5,313	5,313	34,734	
	1977-78	2,204	12,085	387	—	—	..	827	13,917	6,377	6,377	..	
Quebec	1974-75 ^r	116,740	248,724	4,690	4,691	..	..	27,890	112,449	49,764	49,764	564,948
	1975-76 ^r	115,043	246,157	6,017	3,389	..	..	31,284	138,655	50,863	50,863	591,408
	1976-77	116,385	277,983	6,647	6,539	..	..	41,596	149,190	50,479	50,479	648,819
	1977-78	123,873	322,925	7,870	6,340	..	..	77,603	177,471	56,060	56,060	..
Ontario	1974-75	42,355	220,105	80,801	—	—	116,011	118,501	167,458	90,820 ^r	90,820 ^r	836,051 ^r	
	1975-76	53,717	290,187	87,654	—	—	109,391	130,250	177,434	83,707 ^r	83,707 ^r	932,340 ^r	
	1976-77	46,858	316,919	78,789	—	—	101,554	121,938	181,516	88,341	88,341	935,935	
	1977-78	41,708	329,544	86,790	—	—	..	134,295	181,778	84,398	84,398	..	
Manitoba	1974-75	1,441	17,651	2,296	7	7	3,941	13,095	24,451	12,906	12,906	75,788	
	1975-76	1,665	24,766	2,247	250	250	4,784	8,691	25,511	12,204	12,204	80,118	
	1976-77	1,459	25,995	2,761	61	61	3,794	7,661	28,180	12,017	12,017	81,928	
	1977-78	2,175	31,197	2,743	51	..	..	9,229	29,214	10,224	10,224	..
Saskatchewan	1974-75	1,803	10,235	1,909	—	—	3,228	28,966	16,971	14,911	14,911	78,023	
	1975-76	—	—	2,658	94	94	6,481	66,372	17,554	18,653	18,653	111,812	
	1976-77	—	—	1,917	17	17	9,542	77,565	17,544	17,332	17,332	123,917	
	1977-78	—	—	1,719	76	76	..	74,810	17,573	24,070	24,070	..	
Alberta	1974-75	9,321	50,556	11,389	1,374	..	9,748	34,950	21,743	40,967	40,967	180,048	
	1975-76	17,838	83,907	12,861	2,442	..	11,977	54,345	33,246	47,212	47,212	263,828	
	1976-77	22,737	84,663	9,787	2,369	..	12,097	62,604	34,879	53,670	53,670	282,806	
	1977-78	25,286	104,197	12,640	3,200	..	..	46,344	36,400	66,350	66,350	..
British Columbia	1974-75	14,046	120,543	4,516	4,012	..	26,077	57,147	22,130	42,604	42,604	291,371	
	1975-76	10,412	133,132	5,358	4,308	..	34,734	85,101	28,149	44,255	44,255	346,053	
	1976-77	8,961	146,127	5,638	1,638	..	37,528	106,757	30,420	45,752	45,752	382,821	
	1977-78	13,365	137,104	4,408	3,157	..	..	134,490	29,929	49,910	49,910	..
Yukon and Northwest Territories	1974-75	84	1,063	—	—	..	749	334	—	—	—	2,230	
	1975-76	234	3,572	—	—	..	499	425	—	—	—	4,730	
	1976-77	873	1,540	—	—	..	213	936	—	—	—	3,562	
	1977-78	328	1,425	—	—	..	..	820	—	—	—	..

6.11 Registration in continuing education courses by type of institution and by province, 1974-75 to 1977-78 (concluded)

Province or territory and year	School boards, departments of education		Department of education courses		Community colleges		Universities		Total
	Part-time credit	Non- credit	Part-time credit	Non- credit	Part-time credit	Non- credit	Part-time credit	Non- credit	
Canada									
1974-75	208 638	719 088	107 473	10 561	173 464	294 490	401 483	268 957	2 184 154
1975-76	213 921	832 401	119 086	11 277	178 675	389 902	463 604	273 962	2 482 828
1976-77	209 589	898 036	107 060	10 755	175 458	433 516	481 689	290 314	2 606 417
1977-78	222 579	982 445	117 602	12 978	..	495 971	515 096	313 687	..

Sources

6.1 - 6.11 Education, Science and Culture Division, Social Statistics Field, Statistics Canada.

Employment and incomes

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There were approximately 10,882,000 people in the civilian labour force in Canada in 1978 (Table 7.1). Of that number, an estimated 9,972,000 persons were employed; 911,000 or 8.4% were unemployed. The proportion of the female population in the labour force increased from 40.2% in 1972 to 47.8% in 1978 (Table 7.2). Of approximately 7,479,000 males over 15 years of age in the population in 1972, 77.5% were in the labour force; in 1978 the participation rate was 77.9% of 8,531,000.

Government in relation to employment

7.1

Labour Canada

7.1.1

The Canada Department of Labour (Labour Canada) was established by the Department of Labour Act (RSC 1970, c.L-2). The minister of labour's responsibilities include: collecting, digesting and publishing statistical and other information relating to labour conditions; and conducting inquiries into important industrial questions upon which adequate information may not be available.

The minister is responsible for the Canada Labour Code, in effect since July 1971, including sections on labour standards, safety of employees, and industrial relations. The minister also administers acts covering fair wages and hours of work, and worker compensation for government employees and for merchant seamen. The minister reports to Parliament on behalf of the Canada Labour Relations Board, the Merchant Seamen Compensation Board and the Canadian centre for occupational health and safety.

The industrial relations legislation applies to employers, employees and trade unions within federal jurisdiction. This does not include the federal public service but does include employees of Crown corporations and agencies. The department is responsible for conciliation and arbitration procedures in industrial disputes and for certain violations of legislation. It determines wage rates and hours of work for federal government contracts for construction or supplies, and promotes improved industrial relations through union-management consultation and by preventive mediation through industrial relations consultants. The department administers assistance granted to workers in automotive manufacturing and a benefits program for displaced workers in textile and clothing, and footwear and tanning industries.

The department promotes and protects the rights of the parties involved in the world of work, a working environment conducive to physical and social well-being, a fair return for effort, and equitable access to employment opportunities. Reorganization included decentralization into five regions, with headquarters in Moncton, Montreal, Toronto, Winnipeg and Vancouver.

The department maintains records of labour legislation in the provinces and in other countries and provides liaison between the International Labour Organization and federal and provincial governments.

Employment and Immigration Canada

7.1.2

The main objective of the Canada Employment and Immigration Commission (CEIC) is to further the attainment of national economic and social goals by realizing the full productive potential of Canada's human resources, while supporting initiatives of individuals to meet their economic needs and pursue satisfactory work. CEIC is also concerned with unemployment insurance and the admission of immigrants and non-immigrants in accordance with the economic, social and cultural interests of Canada. It administers the social insurance number program which is a key part of the administration of several income support programs and the income tax system. In

Canada, the commission's activities are carried out in more than 400 employment centres and 109 immigration centres in 10 regions.

The labour market group provides programs and services which are administered through Canada employment centres. Their major objectives are: to provide workers and employers with an effective placement service; to assist workers in making full use of their potential by giving them advice or referring them to training programs; and to assist employers in recruiting qualified workers and in planning the long-term work force by providing information on occupations and the labour market.

A manpower consultative service assists industries that must reorganize their work force because of technological change. Moving workers to areas where jobs are available is facilitated by a manpower mobility program.

The labour market group provides counselling services for workers and develops aptitude and skill tests. Newcomers to the labour market and students seeking summer employment are also assisted. Training programs help workers upgrade themselves through courses purchased from provincial or private schools or obtained through contracts with employers. The participants receive a salary, a training allowance or unemployment insurance benefits.

The federal government carries out programs to reduce seasonal unemployment. A five-year job creation strategy was introduced in October 1976 and extended in September 1978 to increase the employability of Canadians and to stimulate employment in both public and private sectors. One element of the strategy was the Canada Works program, a regionalized year-round job creation program to provide community services or facilities. An economic growth component of the program was

There were nearly 10.9 million people in the Canadian labour force in 1978 — nearly 6.7 million men and over 4.2 million women. More than 3.3 million belonged to labour unions, an increase of 4.1% over 1977.

designed to create continuing employment in the private sector by funding activities proposed by federal government departments and agencies. Another program, Young Canada Works, was introduced to facilitate students' future access to the labour market. A summer job corps invited federal government departments and agencies to propose projects creating summer employment for young people, primarily students. A year-round program was introduced in 1979 for young people who had left school.

A program of community employment strategy was introduced for people having difficulty finding and remaining in stable employment. The provincial and territorial governments co-operated with the commission and other federal agencies to create job opportunities for persons who might otherwise depend largely on social assistance or unemployment insurance for income.

Three levels of service are provided for people seeking employment. On the first level, at a job information centre, lists of job vacancies are posted and a library provides information on the programs of the commission and services offered by other departments and agencies. On the second level, assistance is provided to persons who are able to work but who need advice, training or help in finding a job or settling in another area. On the third level, clients who need more intensive assistance are counselled. Outside agencies may be called to provide special help for these persons to find work, referring them to a job or assisting them in choosing one from a "job bank".

In the fiscal year ending March 31, 1978, Canada employment centres helped more than 880,208 people, not including casual workers, find permanent employment and referred 300,000 others to full or part-time courses under the manpower training program. In addition, 49,938 workers and trainees received moving and transportation allowances under the manpower mobility program.

The immigration sector is responsible for selection and reception of immigrants who will be able to establish themselves economically, culturally and socially. They include

people whose skills are required by the Canadian economy, relatives of Canadian residents and refugees. The immigration sector is also responsible for the entry of visitors and for enforcement and control measures to prevent admission of undesirable persons. (See also Chapter 4 Demography, section 4.6.1 Immigration.)

All visitors entering Canada to take temporary work must have an employment authorization from a Canadian immigration office outside the country. To obtain an employment authorization, the applicant must have a job offer from a Canadian employer which has been certified by a Canada employment centre. This regulation protects the Canadian labour force against unwarranted use of foreign labour.

A planning and research division collects and analyzes information on national, regional and local labour market conditions to give direction to the commission's policies and programs. It carries out research programs in support of its own and other employment and immigration activities and develops career and occupational counselling and training materials.

The unemployment insurance program (UI) has been administered by the Canada Employment and Immigration Commission (CEIC) since the merger of the Unemployment Insurance Commission and the Department of Manpower and Immigration in 1977. The commission kept the traditional tripartite character of UI with representation from labour, management and government, the three partners in financing the program. Since UI and employment services were combined, UI claimants have more convenient access to job referrals, training, counselling on occupational choices and information about job opportunities in other areas. Unemployment insurance has become a major social program which provides temporary income support to workers between jobs. In 1978, the UI program paid out nearly \$4.5 billion to an average of 802,000 claimants a month. (See also section 7.6.2 this chapter.)

The statistics in Table 7.21 summarize unemployment insurance in the years 1974-78. Statistics Canada is responsible for compiling and publishing general statistics on the operation of the Unemployment Insurance Act involving such data as claims received from persons applying for benefits, the number of persons drawing benefits and the payments made to beneficiaries. This information is published monthly in *Preliminary unemployment insurance statistics* (Statistics Canada Catalogue 73-001P) and quarterly in *Statistical report on the operation of the unemployment insurance act* (Statistics Canada Catalogue 73-001).

The social insurance number (SIN) originated in 1964 as a replacement for the UI numbering system. It was to be used as a file identifier for the Canada Pension Plan. The SIN eventually became an identifier for the administration of a variety of government services. Every worker in Canada must have a social insurance number. The CEIC issues and monitors SIN cards through its central index. In 1978, about 804,000 new numbers were issued and slightly over 150,000 cards were replaced. More than 185,000 existing records were amended. By the end of 1978, over 20.7 million numbers had been issued. Allowing for the number of deaths, approximately 75% of the population of Canada was registered.

The social insurance number has grown in importance as an account number for government administration and on company payrolls. In 1977, measures were implemented to control the issuing of these numbers. Since 1977, applicants must provide proof of their identity and their status under the law governing citizens and immigrants. Workers continued to apply for social insurance numbers through the mail directly to the central index, but service was improved by decentralizing the application system to local offices of the commission across Canada.

Labour legislation and regulations

7.2

The Canada Labour Code (RSC 1970, c.L-1 as amended), which consolidates previous legislation regulating employment practices and labour standards, applies only to federal undertakings and any other operations that Parliament declares are for the general advantage of Canada or two or more of its provinces.

Because it imposes conditions on the rights of the employer and employee to enter into an employment contract, labour legislation is, generally speaking, law in relation to civil rights, and provincial legislatures are authorized to make laws in relation both to local works and to property and civil rights. Power to enact labour legislation has therefore become largely a provincial prerogative, under which a large body of legislation has been enacted affecting working hours, minimum wages, physical conditions of workplaces, apprenticeship and training, wage payment and wage collection, labour-management relations and worker compensation.

7.2.1 Federal labour legislation

Industrial relations. The mediation and conciliation service of Labour Canada administers the industrial relations provisions of the Canada Labour Code relating to application of formal conciliation procedures, including appointment of conciliation officers and commissioners and establishment of conciliation boards. The service also provides mediation services to parties in post-conciliation negotiations, including strike and lockout situations. If there is a dispute or difference between employer and employees in an industry, the labour minister may refer the matter to an industrial inquiry commission for investigation. On behalf of the minister, the service administers the code's provisions relating to certain types of complaints which must receive ministerial consent before they can be referred to the Canada Labour Relations Board. It handles other violations of the code requiring ministerial consent for prosecution. When requested, the minister may appoint single arbitrators or arbitration board chairmen if parties or nominees are unable to agree on the selection.

The Canada Labour Relations Board administers provisions in the labour code governing acquisition and termination of bargaining rights, successor rights and obligations, disposition of applications relating to technological change and to illegal strikes and lockouts, complaints of unfair practices, and granting of access to employer premises.

Labour standards. The code sets minimum standards of employment for employers and employees in industries under the legislative authority of Parliament.

The code sets both standard and maximum hours of work. The overtime rate (one and a half times the regular rate) must be paid after eight hours in a day and 40 hours in a week, to a maximum of 48 hours in a week. Hours may be averaged when an employee's schedule of hours varies from day to day or week to week because of the nature of the work. If the labour minister is satisfied that exceptional circumstances justify it, he may issue a permit allowing an employee to exceed the maximum hours. The Governor-in-Council may make regulations varying standard and maximum hours for classes of employees in any industrial establishment where code standards would be unduly prejudicial to employees or seriously detrimental to operation of the establishment. An inquiry must be held before such regulations are made.

The minimum wage was \$2.90 an hour for all persons 17 years of age and over and \$2.65 an hour for persons under 17 as of April 1, 1976. The Governor-in-Council may issue orders from time to time changing the minimum rate.

Employees are entitled to two weeks vacation with pay each year, three weeks after six consecutive years with the same employer and a holiday with pay on each of the nine general holidays or substitutes for them.

An employer must give advance notice to the labour minister and the union, with a copy to the employment and immigration commission, when dismissing 50 or more employees during a four-week period. The length of notice varies according to the number of employees being dismissed: 50-100 employees, eight weeks; 101-300 employees, 12 weeks; more than 300 employees, 16 weeks. In addition, the employer and the trade union must provide the employment and immigration commission with whatever information it requests to assist the employees. The requirement to give notice may be waived for an industrial establishment or a specified class of employees by an order of the labour minister, subject to any terms or conditions he may determine.

Under the code provisions respecting individual termination of employment (except dismissal for just cause) every employee with three consecutive months service

(except a manager, superintendent or member of a profession) is entitled to two weeks notice of termination of his employment. In lieu of such notice, he is entitled to two weeks wages at his regular rate for his regular hours. In addition, an employee who has completed five consecutive years of continuous employment is entitled to severance pay based on two days wages at the regular rate for regular hours for each year of employment up to a maximum of 40 days wages. However, the employer is not required to give severance pay to an employee who is dismissed for just cause or to a person who, on termination of employment, is entitled to a retirement pension. Protection is provided from unjust dismissal to employees with at least 12 consecutive months service with the same employer.

Maternity protection provisions grant 17 weeks of maternity leave — 11 weeks before and six weeks after childbirth — and ensure job security to women absent from work because of pregnancy. To be eligible a woman must have been continuously employed by her employer for 12 months. The code provides for voluntary prenatal leave up to 11 weeks before the anticipated date of delivery and this period extends to the actual date of confinement.

The code prohibits an employer from dismissing, laying off or suspending an employee solely because of garnishment. The code also affords protection from unjust dismissal due to an employee's illness. Three days bereavement leave is provided for persons with at least 12 months continuous service.

Fair wages policy. Wages and hours on government construction contracts are regulated by the Fair Wages and Hours of Labour Act and its regulations. The rates are never less than the minimum hourly rate prescribed by labour standards in the labour code. Wages and hours of work on contracts for equipment and supplies are regulated by order-in-council.

Safety of employees. The code's safety section, incorporated in 1968, was the first general safety legislation passed by Parliament. To ensure safe working conditions for all employees in activities under federal jurisdiction, it provides for all elements of a complete industrial safety program; obliges employers and employees to perform their duties in a safe manner; authorizes the making of regulations to deal with safety problems; complements other federal laws and provincial legislation; authorizes advisory committees to assist in developing the program under consultation among federal and provincial government departments, industry and organized labour; and provides for research into causes and prevention of accidents and for an extended safety education program. Federal public service employees are given equivalent protection under Treasury Board standards complementary to the safety and health regulations of the code. Regional safety officers enforce them.

As of January 1, 1979, regulations were in force governing coal mine safety, elevating devices, first aid, machine-guarding, noise control, hand tools, fire safety, temporary work structures, confined spaces, safe illumination, boilers and pressure vessels, building safety, dangerous substances, electrical safety, materials handling, protective clothing and equipment, sanitation, hours of service in the motor transport industry, accident investigation and reporting, and safety and health committees.

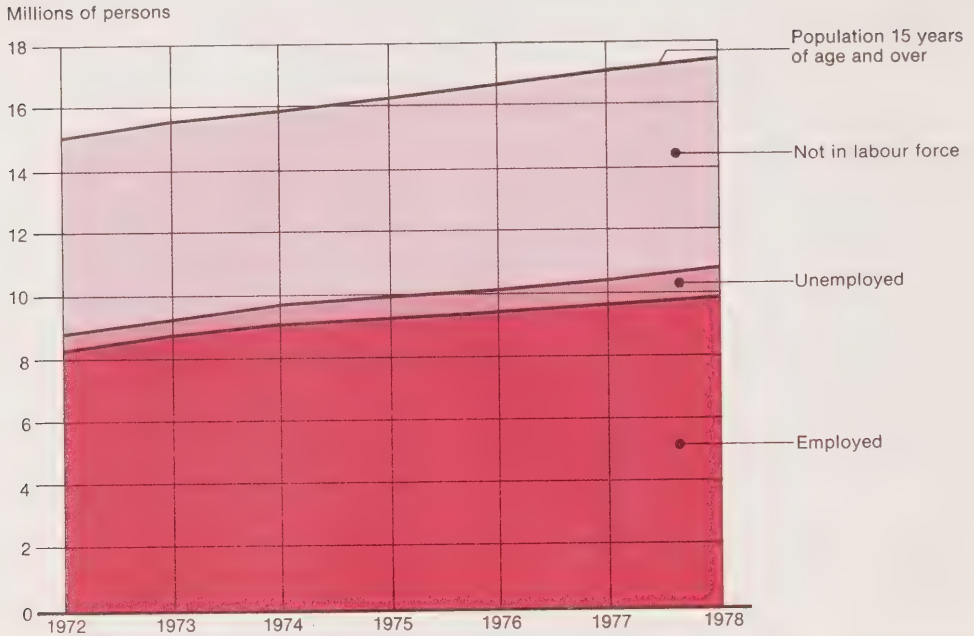
Provincial labour legislation

7.2.2

Industrial relations. All provinces have legislation similar to the federal code designed to establish harmonious relations between employers and employees and facilitate settlement of industrial disputes. These laws guarantee freedom of association and the right to organize, establish labour relations boards or other administrative systems for certification of a trade union as exclusive bargaining agent of an appropriate unit of employees, and require an employer to bargain with the certified union representing his employees.

Alberta, Ontario, New Brunswick, Nova Scotia, Prince Edward Island and Newfoundland have special provisions in their general labour relations legislation dealing with accreditation of employer organizations in the construction industry. In British Columbia accreditation provisions are not limited to the construction industry.

Estimates of the civilian labour force, employed and unemployed, 1972-78



The Quebec Construction Industry Labour Relations Act provides for one employer association to represent all construction employers. Under every jurisdiction legislation requires that the parties comply with conciliation or mediation procedures before a strike or lockout may legally take place. Every collective agreement must provide for the final settlement, without stoppage of work, of disputes arising out of interpretation or application of the agreement. Strikes and lockouts are prohibited during the term of a collective agreement. Unfair labour practices are prohibited under every legislation. In some provinces labour relations for special groups such as teachers, municipal and provincial police personnel, municipal firemen, hospital workers, civil servants and employees of Crown corporations are regulated by special legislation.

Employment standards. Most provincial and territorial jurisdictions have legislated some or all of such recognized basic standards as: annual vacations with pay, statutory holidays, hours of work and overtime rates, maternity protection, minimum wage rates and termination of employment.

Hours of work. In Alberta and British Columbia hours are limited to eight a day and 44 a week, in Ontario to eight a day and 48 a week. One and a half times the regular rate is to be paid after eight and 44 hours in Alberta and after eight and 40 in British Columbia. The Ontario act requires, with some exceptions, that one and a half times the regular rate be paid for work done beyond 44 hours. Standard hours of work in Manitoba and Saskatchewan are eight a day and 40 a week with a maximum of 44 a week in Saskatchewan where payment of one and a half times the regular rate is required if work is continued after eight and 40 hours; this provision applies to shop employees in Newfoundland, but for other employees it is effective after 44 hours. Manitoba does not

require that an employee work overtime except in special circumstances and sets a rate of one and a half times the regular rate after eight and 40 hours. One and a half times the regular rate must be paid in Nova Scotia after 48 hours a week, in Northwest Territories after eight hours a day and 44 a week, and in Yukon after eight a day and 40 a week. It must be one and a half times the minimum rate in Prince Edward Island after 48 hours, Quebec after 45 and New Brunswick after 44. Some exceptions occur in all acts. No general standard of hours of work is in effect in New Brunswick or Newfoundland.

Minimum wages. All jurisdictions have enacted minimum wage legislation to ensure adequate living standards for workers. These laws vest authority in a minimum-wage board or the Lieutenant-Governor-in-Council to set wages. Minimum wage orders are reviewed frequently. In most provinces such orders cover practically all employment. Domestic service in private homes is excluded in all provinces except Prince Edward Island and in Newfoundland where an employer may not pay less than \$30 a week. Farm labour is also excluded except in Newfoundland but in several provinces people employed in farm-related occupations are covered. In Ontario and Nova Scotia this exclusion is limited to farming proper, although certain farm-related occupations are covered. Fruit, vegetable and tobacco harvesters are covered by Ontario's minimum wage. Minimum wage rates apply in Manitoba to those employed in selling horticultural or market garden products grown by another person, in Saskatchewan to those in egg hatcheries, greenhouses, nurseries and brush-clearing operations, and in Alberta and Prince Edward Island to farm workers employed in commercial undertakings. The wage rates set apply throughout the province and are the same for both sexes.

In Northwest Territories and Yukon, labour standards regulations were issued under labour standards ordinances. Both require the payment of a minimum rate of wages to employees who are 17 and over.

Where employees are paid on a basis other than time, or on a combination of time and some other basis, they are required to receive the equivalent of the minimum wage. Provision is made in the legislation of almost all jurisdictions for employment of handicapped workers at rates below the established minimum, usually under a system of individual permits. Except in New Brunswick, Newfoundland, Saskatchewan and Yukon, the orders set special minimum rates for young workers.

As of January 1, 1979, the minimum hourly wage rates for experienced adult workers were: Newfoundland \$2.50, Prince Edward Island \$2.75, Nova Scotia \$2.75, New Brunswick \$2.80, Quebec \$3.37, Manitoba \$2.95, Saskatchewan \$3.25, and Alberta, British Columbia, Ontario, Northwest Territories and Yukon all \$3.00.

Regulation of wages and hours in certain industries. In five provinces, the general orders are supplemented by special orders, applying to a particular industry, occupation or class of workers and in some cases taking into account a special skill. British Columbia, which originally had a separate minimum wage order for each industry or occupation, has been consolidating its orders. Two special orders still remain and their minimum rate is the same as the rate set in the general order. Quebec has four industry orders, governing the retail food trade, public works, sawmills and forest operations. The rates set by all four are the same as the general rates.

The other three provinces set only a few special rates. Nova Scotia has established rates for employees in beauty parlours and province-wide rates for logging and forest operations and for road building and heavy construction. In New Brunswick special rates have been set for construction, mining, primary transportation and logging, forest and sawmill operations. In Alberta a weekly rate has been set for commercial agents and sales people. In Ontario special rates in the general regulation apply to the construction and ambulance service industries.

Under the Quebec Collective Agreement Decrees Act, certain terms of a collective agreement, including those dealing with hours and wages, may be made binding on all employers and employees in the industry concerned provided the parties to the agreement represent a sufficient proportion of the industry. The standards made binding under this procedure are contained in a decree which has the force of law. Approximately 54 decrees are in effect, applying to the garment trades, barbering and

hairdressing, commercial establishments, garages and service stations and other industries and services. A number apply throughout the province. In construction, working conditions are governed by a decree under the Construction Industry Labour Relations Act.

A construction wages act in Manitoba, applying to both private and public work, sets minimum wage rates and maximum hours of work at regular rates for employees in the industry on the recommendation of a board equally representing employers and employees, with a member of the public as chairman. Under this act annual schedules set the regular work week and hourly wage rates for various classifications of workers in the heavy construction industry, in the greater Winnipeg building construction industry and major building projects, and in rural areas.

Annual vacations and public holidays. All jurisdictions have annual vacations legislation applicable to most industries. The general standard is two weeks. In Manitoba and Northwest Territories workers are entitled to three weeks after five years of service, and in Saskatchewan three weeks after one year and four weeks after 10 years. All jurisdictions, except Prince Edward Island have enacted general legislation dealing with public holidays. The number of holidays varies from five to nine and provisions for payment also vary.

Vacation pay equals: 4% of annual earnings in British Columbia, Newfoundland, Nova Scotia, Prince Edward Island, New Brunswick, Yukon, Northwest Territories, Quebec and Ontario; regular pay in Manitoba and Alberta; and 3/52nds of annual earnings in Saskatchewan. The federal rate is 4%.

Termination of employment. As in the federal jurisdiction, eight provinces have legislation requiring an employer to give notice to the individual worker whose employment is terminated. In Saskatchewan and Prince Edward Island an employer must give an individual employee one week's written notice of termination. In Manitoba it is one regular pay period. In Alberta, Newfoundland, Nova Scotia and Ontario the length of notice varies with the period of employment. In Ontario and Nova Scotia: three months to two years service, one week; two to five years, two weeks; five to 10 years, four weeks; 10 years or more, eight weeks. In Alberta: three months but less than two years, seven days; two years or more, 14 days. Quebec requires the employer of a domestic, a servant, journeyman or labourer to give one week's notice of termination if the employee is hired by the week, two weeks notice if hired by the month and a month's notice if hired by the year. Alberta, Manitoba, Newfoundland, Nova Scotia, Prince Edward Island and Quebec require an employee to give similar notice before quitting a job.

As in the federal jurisdiction, five provinces require an employer to give advance notice of a planned termination of employment or layoff of a group of employees. Manitoba, Newfoundland and Ontario group notice requirements apply when an employer plans to terminate the employment of 50 or more persons within four weeks. Length of notice is related to the number of workers involved. Manitoba requirements are: 50-100 employees, eight weeks; 101-300, 12 weeks; over 300, 16 weeks. In Ontario and Newfoundland: 50-199, eight weeks; 200-499, 12 weeks; 500 or more, 16 weeks. Nova Scotia and Quebec group notice requirements apply when an employer contemplates dismissal of 10 or more employees within a period of two months. Again, length of notice required varies with the number of workers involved: 10-99, two months; 100-299, three months; 300 and over, four months.

Maternity protection. Several provinces have legislation to ensure job security of women workers before and after childbirth. Alberta and Saskatchewan provide for 12 weeks leave before childbirth and six weeks after. British Columbia and New Brunswick acts provide for six weeks leave before childbirth and six weeks after; in New Brunswick the leave may extend to 17 weeks; Manitoba and Nova Scotia allow 11 weeks before and six after. Ontario and Nova Scotia provide for a minimum of 17 weeks leave. Postnatal leave is compulsory, unless a medical doctor authorizes an earlier return to work. In all jurisdictions, the right to maternity leave is supplemented by a guarantee that an employee will not lose a job because of absence on maternity leave.

Human rights. Laws to ensure fair employment practices have been enacted throughout Canada. These include employment and employment-related subjects such as membership in trade unions. All jurisdictions have augmented this legislation to form a human rights code. Northwest Territories and Yukon have enacted fair practices ordinances. Most of these codes cover general matters, employment and employment-related subjects, occupancy and property matters, and access to facilities and services generally available to the public.

Most jurisdictions prohibit discrimination on grounds of race, religion, national origin, colour, sex, age and marital status. In selected cases the prohibited grounds include political beliefs, ethnic origin, physical handicap, creed, source of income, ancestry, social condition, attachment or assignment of pay, and a conviction for which a pardon has been granted.

Equal pay provisions are in force across Canada. Criteria for determining the meaning of equal work vary from one act to another. Methods of enforcement also vary.

Apprenticeship. All provinces have apprenticeship laws providing for an organized procedure of on-the-job training and school instruction in designated skilled trades. Statutory provision exists in most for issuing qualification certificates, on application, to tradesmen in certain trades. In some provinces legislation is in effect making it mandatory for certain classes of tradesmen to hold a certificate of competency.

Accident prevention. In Canada both federal and provincial legislatures have the power to enact laws and regulations concerning the protection of workers against industrial accidents or diseases. However, the provinces have major jurisdiction in this field, with the federal authority limited to certain industries considered to be under federal regulation. Legal standards designed to ensure the safety, health and welfare of persons employed in resource, industrial and commercial establishments exist in all jurisdictions. Authorities responsible for administration of such standards are, in the main, the departments of labour, health, mines and worker compensation boards.

General safety laws and regulations cover most employment in the country. Safeguards for worker protection are established for fire safety, sanitation, heating, lighting, ventilation, protective equipment, materials handling, safety of tools, guarding of dangerous machinery, safe handling of explosives and protection against noise and radiation. In certain jurisdictions, workers have the right to refuse work in special circumstances where safety or health could be endangered.

Other safety laws and regulations are more specific. They concern hazardous equipment such as boilers and pressure vessels, electrical installations, elevating devices and equipment burning gas and oil. Others are directed toward hazardous industries such as mining, construction, demolition and logging.

Safety inspection is provided for in all jurisdictions. An inspector can give directions on any matter regulated by legislation. Penalties exist where an employer contravenes any provision of an occupational safety act or regulation or fails or neglects to comply with a direction made by an inspector or other authority.

Worker compensation. In Canada, compensation laws are generally within the competence of provincial legislatures and apply to most employers in each province. In all provinces compensation is provided for personal injuries sustained at work unless the disablement is for less than a set number of days or where injury is due to the worker's serious and wilful misconduct and does not result in death or serious disablement. Compensation is also payable for industrial diseases arising from work.

Each act provides for an accident fund administered by a compensation board to which employers are required to contribute and through which compensation and medical benefits are paid. The acts thus provide for a system of compulsory collective liability, relieving employers of individual responsibility for accident costs. Assessment rates for each class of industry are fixed by the board according to hazards of the class.

Various types of benefits are provided for a worker protected by compensation legislation. Benefits for disability are based on a percentage of average weekly earnings subject to an annual ceiling. Persons with a permanent or temporary total disability are

presumed not to be able to work at all and get 75% of gross average weekly earnings (90% of net earnings in Quebec) as long as the disability lasts. Partial disablement entitles a worker to proportionate compensation. Medical and hospital benefits are also provided.

A primary objective of compensation is rehabilitation of the injured worker. Boards may adopt any means considered expedient to help get workers back to work and to lessen any handicap.

When a worker dies from an industrial accident or disease, dependents are entitled to a monthly payment fixed by legislation. However, for recent cases in Alberta and Manitoba, widows receive the permanent total disability pensions the deceased workers would have been entitled to if they had lived. This is also true in British Columbia where the full permanent total disability pension is paid or a portion of it depending on the number of dependent children and the age of the widow or invalid widower. In Quebec, the surviving spouse and other eligible dependents receive a certain percentage of this permanent total disability pension according to the number of persons suffering a pecuniary loss. A monthly allowance is also payable for each dependent child to the age limit fixed by law or, in some jurisdictions, for the duration of a child's education. If a child's remaining parent dies, he becomes eligible for the usually higher monthly payment provided for an orphan.

7.3 Organized labour

7.3.1 Union membership

At January 1, 1978, labour unions reported a total of 3.3 million members in Canada, an increase of 4.1% over 1977 (Table 7.24). In 1978 union members consisted of 39.0% of non-agricultural paid workers and 31.3% of the total civilian labour force. Membership, by type of union and affiliation, is presented in Table 7.25. Canadian Labour Congress (CLC) affiliates, with 2.2 million members in 1978, accounted for 67.2% of total union membership compared with 68.7% in 1977. Of the total in CLC affiliates in 1978, 1.3 million members belonged to unions that were also affiliated with the American Federation of Labor and Congress of Industrial Organizations (AFL-CIO) in the United States; membership of unions affiliated with the CLC but not holding affiliation with the AFL-CIO totalled 922,317 or 27.9% of the total. Federations affiliated with the Quebec-based Confederation of National Trade Unions (CNTU) had 177,755 members or 5.4% of total union membership; the Confederation of Canadian Unions (CCU) represented 26,007 members or 0.8%; another 1.2% was reported by the Centrale des syndicats démocratiques with 38,083 members; and the remaining 25.1% belonged to various unaffiliated international and national unions and independent local organizations.

International unions with headquarters in the United States accounted for 47.4% of the 1978 membership compared with 49.0% in 1977.

In 1978, 18 unions reported 50,000 or more members, accounting for 51.4% of the total membership. The 10 largest, listed with their affiliation, ranked as follows in 1978:

- 1 Canadian Union of Public Employees (CLC), 231,000
- 2 United Steelworkers of America (AFL-CIO/CLC), 199,000
- 3 Public Service Alliance of Canada (CLC), 154,432
- 4 International Union, United Automobile, Aerospace and Agricultural Implement Workers of America (CLC), 130,000
- 5 National Union of Provincial Government Employees (CLC), 128,061
- 6 United Brotherhood of Carpenters and Joiners of America (AFL-CIO/CLC), 89,010
- 7 International Brotherhood of Teamsters, Chauffeurs, Warehousemen and Helpers of America (Ind.), 86,603
- 8 Quebec Teachers' Congress (Ind.), 85,000
- 9 Social Affairs Federation (CNTU), 70,000
- 10 International Brotherhood of Electrical Workers (AFL-CIO/CLC), 63,914.

Wage trends in major collective agreements

7.3.2

Labour Canada publishes base rate settlement data for collective agreements on a quarterly basis. The agreements covered are limited to negotiating units of 500 or more employees in all industries except construction. The base rate for a negotiating unit is defined as the lowest rate of pay, expressed in hourly terms, for the lowest-paid classification used for qualified workers in the bargaining unit. The wage data are not necessarily representative of the average increases received by the workers in the whole negotiating unit. Nevertheless, the data are aggregated using the total number of employees in the negotiating unit.

In 1978, some 656 collective agreements covering 1,283,880 workers were settled. As shown in Table 7.26, the average annual percentage increase in base rates in these settlements was 6.9% compound over the term of the agreements. The comparable percentage for 1977 was 7.8% compound.

The 1978 settlements of one-year duration produced increases averaging 7.0%; those of two-year duration 7.4% and 6.9% for the first and second years, respectively; and those of three-year duration, 7.0%, 5.1% and 4.8% for the first, second and third years of the contracts.

A further breakdown reveals that of the 656 settlements in 1978, 147 covering 285,265 employees included a cost of living allowance (COLA). These 147 settlements produced an average increase, prior to the calculation of COLA, of 6.0% over the life of the agreements, whereas the remaining 509 agreements (998,615 employees) without a COLA clause produced an average increase of 7.2%.

Strikes and lockouts

7.3.3

Statistical information on strikes and lockouts in Canada is compiled by Labour Canada on the basis of reports from employment centres, provincial labour departments and other sources. Table 7.27 presents a breakdown by industry and jurisdiction of strikes and lockouts in 1977 and 1978 involving three or more workers and amounting to 10 or more man-days. The 803 work stoppages reported in 1977 involved 217,557 workers and 3.3 million man-days. Corresponding figures for 1978 were 1,058 stoppages, 401,688 workers and 7.4 million man-days.

Time loss, in relation to total estimated working time of non-agricultural paid workers, was equivalent to 15 man-days per 10,000 man-days worked in 1977 and 34 man-days per 10,000 in 1978.

The number of workers involved includes all reported on strike or locked out, whether or not they belonged to the unions directly involved in the disputes leading to work stoppages. Workers indirectly affected, such as those laid off as a result of a work stoppage, are not included. Duration of strikes and lockouts in terms of man-days is calculated by multiplying the number of workers involved in each work stoppage by the number of working days the stoppage was in progress.

The labour force

7.4

Monthly labour force surveys

7.4.1

Since 1946, statistics relating to employment and unemployment at the national level, and since 1966 at the provincial level, have been provided through a Statistics Canada labour force survey. From 1945 until 1952 it was conducted quarterly, and since November 1952 it has been carried out monthly. In 1976, after three years of developmental work, substantial revisions to the survey were made to enhance the quality and increase the range of data collected, particularly information relating to the dynamics of the labour market.

The survey sample was designed to represent all persons in the population 15 years of age and over residing in Canada with the exception of the following: residents of Northwest Territories and Yukon, persons living on Indian reserves, inmates of institutions and full-time members of the armed forces. Interviews are carried out in approximately 55,000 households chosen by area sampling methods across the country.

Until 1977 the sample size had been fixed at approximately 30,000 households. Estimates of employment, unemployment and non-labour force activity generated from the survey refer to a specific week each month, normally the week containing the 15th day. The labour force is composed of members of the civilian non-institutional population 15 years of age and over who, during reference week, were employed or unemployed.

The definition of employed includes all persons who, in reference week, did any work for pay or profit, either paid work in an employer-employee relationship or self-employment. Also included is unpaid family work contributing to the operation of a farm, business or professional practice owned or operated by a related member of the household. It also includes persons who had jobs but were not at work due to illness or disability, personal or family responsibilities, bad weather, labour disputes or other reason.

The unemployed are those who, in reference week, were without work, had actively looked for work in the past four weeks and were available for work; had not actively looked for work in the past four weeks but had been on layoff, with expectation of returning to work, for 26 weeks or less and were available for work; or had a new job to start in four weeks or less and were available for work. Persons not in the labour force are those defined as neither employed nor unemployed.

Because they are based on a sample of households, estimates derived from the survey are subject to sampling error. Extensive efforts are made to minimize the sampling error, and in general the error, expressed as a percentage of the estimate, tends to decrease as the size of the estimate increases.

Revisions in the survey included introduction of an entirely new and expanded questionnaire, adjustment of some definitions, revision of the sample frame, change of population totals used to weight the sample and adoption of new methods of transmitting and processing the survey information. This revised survey was run in parallel with the former survey throughout 1975 and, as expected, some estimates from the two surveys differed significantly. By using relationships in estimates from the two surveys for 1975, estimates from the former survey have been revised for the period 1966 to 1974, allowing production of a consistent time series from 1966 to the present, except for the industry and paid worker series which were revised only to 1970.

In the period 1969-78, the Canadian labour force, including both employed and unemployed, increased by 2.7 million persons or 32.8%. There was an increase of 55% in the number of women in the labour force and an increase in the number of men of only 22%. These increases resulted from an increase in the participation rate (the labour force as a percentage of the corresponding population aged 15 and over) for women from 38.0% in 1969 to 47.8% in 1978, and a small decrease for men from 78.3% to 77.9%.

The increase in the participation rate of young males, age 15-24, from 62.7% to 69.7% more than offset the slight decline for older males, 25 and over, from 83.8% to 81.0%. In the case of women, both age groups increased their participation although the rise was more pronounced among those aged 15-24.

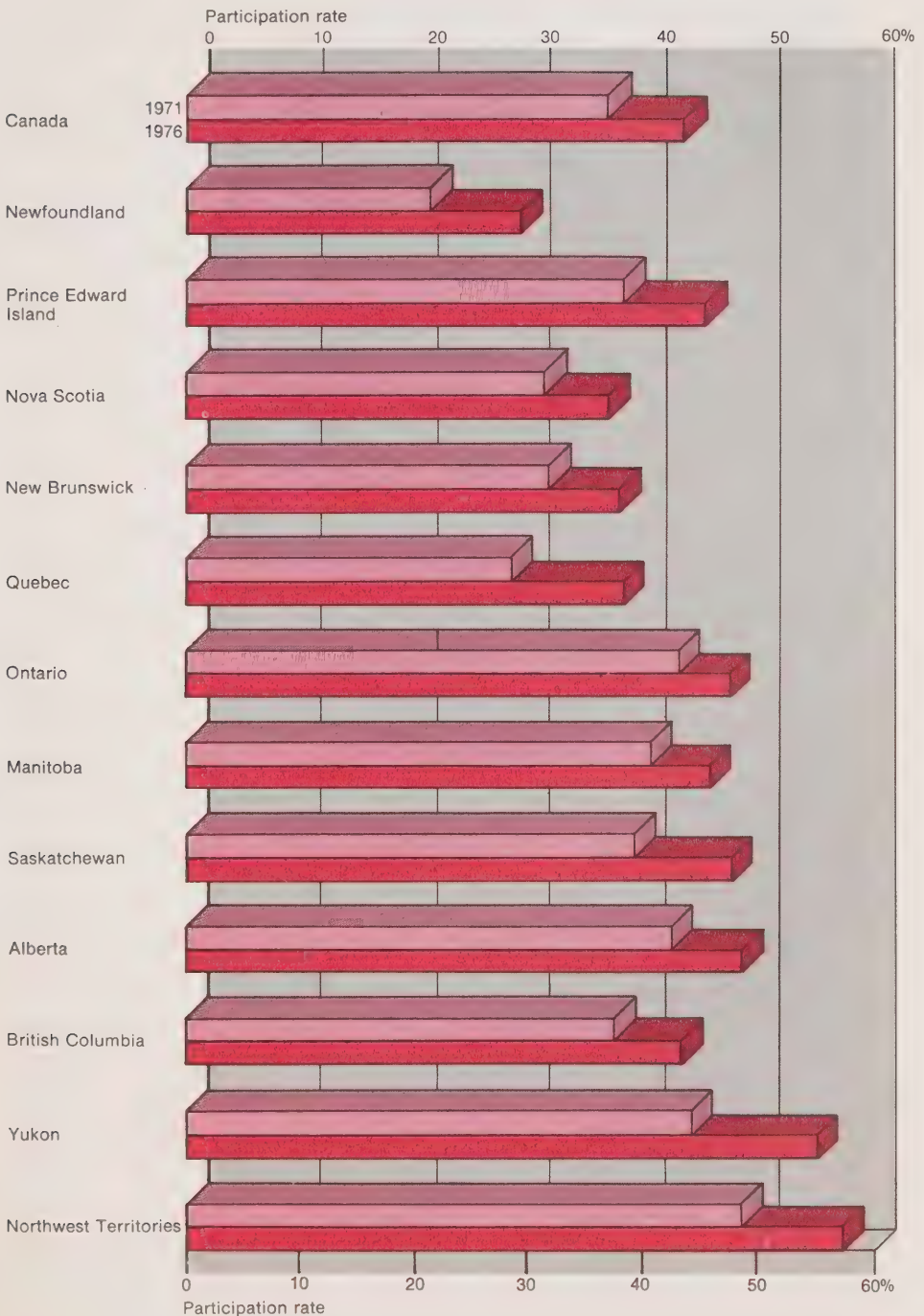
The total number of persons employed in Canada rose by 2.1 million or 27.3% over the 1969-78 period. Although employment rose in all provinces the increases were not uniform, ranging from 18.0% in Saskatchewan to 47.3% in Alberta. Other increases were 30.7% in Newfoundland, 25.0% in Prince Edward Island, 20.5% in Nova Scotia, 25.3% in New Brunswick, 18.5% in Quebec, 29.1% in Ontario, 18.6% in Manitoba and 38.7% in British Columbia.

Unemployment as a percentage of the labour force varied from 4.4% in 1969 to 8.4% in 1978 with an average over the entire 1969-78 period of 6.5%. Throughout those years women had higher unemployment rates than men and persons aged 15-24 had considerably higher rates than persons 25 and over.

7.4.2 Labour force census data

In 1976, for the first time in a national quinquennial census, questions were asked of persons 15 and over relating to labour force activity. In the decennial census, information on labour characteristics, such as occupation and industry, is also collected.

Married women¹ in the labour force



1. Married females 15 years and over, including those separated.

The census has the advantage of providing this type of information in more detailed terms of geographical areas, classifications and cross-classifications than the monthly surveys. Summary tabulations from the 1971 Census are presented in Tables 7.6 and 7.7. Further information is available in many census reports on these and other aspects of the labour force (see 1971 and 1976 Census Publications, Statistics Canada Catalogues 94-701 to 94-837).

Because of differences in coverage, methodology and reference period, census information in some ways is not comparable with that collected by the monthly survey. Of particular importance among the differences are those of coverage and questions asked, even though the fundamental concepts are the same. As stated the smaller labour force survey sample included persons 15 and over but excluded Yukon and Northwest Territories, Indian reserves, members of the armed forces, overseas households and inmates of institutions. The 1976 and 1971 Census questions were asked of all persons 15 and over in a 33⅓% sample of households (about 2 million).

Labour force in Yukon and Northwest Territories. The 1976 Census showed that the labour force participation rate for Yukon was 71.1% and for Northwest Territories, 64.8%. Both rates are higher than in the 1976 Census for Canada as a whole (60.0%). Female participation was higher in Yukon at 58.8% than in Northwest Territories where exactly one-half of all females 15 years and over were in the labour force. Unemployment rates were also higher in Yukon for all sex and age groups. The national pattern of higher unemployment rates for females than males and higher rates for persons 15 to 24 than for those 25 and over prevailed.

Married women in the labour force. The increase in labour force participation of married females, 15 and over, from 37.0% in 1971 to 43.7% in 1976, continued the trend found in the previous decade. All provinces showed increases but Newfoundland retained its place as the province with the lowest rate, while Quebec was replaced by Nova Scotia as the province with the second lowest. The highest rate in 1976, as in 1971, was in Yukon, with Alberta next, replacing Ontario.

Foreign-born persons in the labour force. Results from the 1971 Census indicate that immigrants constituted 20% of the labour force. Table 7.6 presents data on persons in the total labour force by country of origin and region of Canadian residence in 1971. According to these figures, more than four-fifths of immigrants in the labour force came from Europe and one-quarter from Britain. Over half the immigrants are concentrated in Ontario where they form more than a quarter of the labour force, as they do in British Columbia, while they make up less than 5% in the Atlantic provinces.

Labour force by occupation. New occupational classification was used for the 1971 Census as defined in *Occupational classification manual, Census of Canada 1971, Volume I* (Statistics Canada Catalogue 12-536E). The new classification was designed to meet the need to standardize occupational data gathered from various sources. However, this standardization meant redesigning the existing classification, in terms of both the number of groupings of occupational titles and in assigning these titles to particular groups.

Therefore the use of the new classification in 1971 resulted in a complete break in the census time series on occupation. In an effort to reconcile the occupational data of 1971 with those of earlier censuses, occupations of a sample of individuals (nearly 110,000 experienced members of the labour force) were recoded based on the 1971 forms and the 1961 classification. Table 7.7 gives partial results of this recoding; it contains distributions by occupation divisions for the 1951, 1961 and 1971 censuses, all based on the 1961 classification.

During these two intercensal periods the first notable change was the increasing importance of non-manual work. Professional and technical occupations became much more important, increasing from 7.3% to 12.5% from 1951 to 1971, while office work moved up from 11.0% to 14.8% over the same period. There was also an increase in the proportion of service and recreation occupations to the overall labour force (11.6% in 1971 from 9.7% in 1951).

Other occupation divisions lost ground. For instance, farmers and farm labourers, who made up 15.6% of the labour force in 1951, fell to 5.8% in 1971. Considerable decreases in manpower were recorded for primary occupations in the two decades. Despite their growth in size, manual occupations grouped under the heading of workers declined in relation to the overall labour force.

Job vacancies

7.4.3

The **job vacancy survey** was a Statistics Canada sample survey conducted by both mail and interviews among employers representing approximately 90% of employment. The survey covered all industrial sectors except agriculture, fishing and trapping, domestic service and the non-civilian component of public administration and defence. The survey measured unfilled vacancies on six days in a quarter. From these a quarterly average was produced. The estimates should be interpreted as an approximation of the general level of vacancies at any day in the quarter.

For a job to be considered a vacancy, it had to meet the following requirements: it must be available immediately; the employer must have undertaken, within four weeks prior to the reference date, some specific recruiting action to fill the vacancy; the job must have been vacant for the entire reference day; and it must be available to persons outside the firm.

Data from the survey were published from 1971 to 1978. A summary for all categories appears in Table 7.9.

Employment statistics

7.5

Employment, earnings and hours

7.5.1

Monthly records of employment have been collected from larger business establishments since 1921. The surveys conducted by Statistics Canada collect employment, payroll and man-hours information; average weekly earnings, average hourly earnings, and average weekly hours are derived from this collected information. Employment indexes are based on 1961=100; the data are compiled on the 1960 Standard Industrial Classification (SIC).

Employment areas not covered are agriculture, fishing and trapping, education and related services, health and welfare services, religious organizations, public administration and defence and private households.

Monthly employment statistics relate to the number of employees drawing pay in the last pay period in the month. Data are requested for all classes of employees except homeworkers and casual employees working less than one day in the pay period. Working owners and partners of unincorporated business and professional practices are also excluded. Respondents report gross wages and salaries paid in the last pay period in the month, before deductions are made. Reported payrolls represent gross remuneration and paid absences in the period specified, including salaries, commissions, piece-work and time-work payments, and such items as shift premiums and regularly paid production, incentive and cost of living bonuses. Statistics on hours relate to regular and overtime hours worked by wage-earners for whom records of hours are maintained, and to hours credited to wage-earners absent on paid leave. If the report period exceeds one week, payroll and hours data are reduced to weekly equivalents.

Industrial employment. Table 7.10 indicates that, over the 1974-78 period, the industrial composite index of employment (1961=100) for Canada rose by 7.8%. Among industry divisions showing gains, finance, insurance and real estate led with a 26.8% advance, followed by services (26.5%), transportation, communication and other utilities (12.3%), trade (11.8%) and mining, including milling (6.9%). Declines occurred in construction (9.4%), forestry (5.8%) and manufacturing (1.8%). Compared with 1977, the industrial composite index for 1978 increased by 1.5%.

Annual average index numbers of employment for the years 1974-78 are shown by industrial division, group, province and metropolitan area in Tables 7.11 - 7.13.

Weekly earnings in industry. Average weekly earnings at the national industrial composite level have increased substantially, rising from \$23.44 in 1939 to \$117.64 in 1969 and \$265.37 in 1978. In the recent period, gains have been 9.6% in 1977 and 6.2% in 1978. Annual index numbers of employment and average weekly earnings for 1976-78 are presented by industry, province and urban area in Table 7.14. Table 7.15 shows annual average weekly earnings by industrial division for the years 1974-78 and monthly averages for 1977 and 1978.

Hourly wage rates. The monthly survey of employment, payrolls and man-hours covers statistics of hours of work and paid absence of those wage-earners for whom records of hours are maintained, plus corresponding totals of gross wages paid; these wage-earners are mainly hourly-rated production workers. Information on hours is frequently not kept by employers for ancillary workers nor, in many industries and establishments, for any wage-earners. Salaried employees are excluded by definition from the series. As a result of these exclusions, data are available for fewer industries and workers than are covered in the employment and average weekly earnings statistics.

During 1971-78 average weekly hours declined while average hourly earnings rose substantially. For the most part, upward wage-rate revisions in all industries were responsible. Technological changes, which in many cases involve the employment of more highly skilled workers at the expense of those in the lower-paid occupations, also contributed to the advance of average hourly earnings. As indicated in Table 7.16, from 1971 to 1978 average hourly earnings rose by 116.6% in mining, by 116.4% in construction and by 108.5% in manufacturing. During the same period, average weekly hours rose by 0.2% in mining and declined by 0.5% in construction and 2.3% in manufacturing. Comparing 1978 to 1977 average hourly earnings increased by 5.2% in construction, by 7.2% in manufacturing and by 7.9% in mining; weekly hours decreased by 0.2% in mining and increased by 0.3% in manufacturing and by 0.8% in construction. Table 7.17 presents average weekly hours and hourly earnings in specified industries and selected urban areas for 1976-78.

7.5.2 Labour income and costs

Labour income, comprising wages and salaries and supplementary labour income, is defined in *Estimates of labour income* (Statistics Canada Catalogue 72-005) as all compensation paid to employees residing in Canada. By definition this includes Canadians who are employed abroad by the federal government. Not included are earnings received by self-employed persons such as independent professionals, proprietors of unincorporated businesses and farmers. Military pay and allowances which fit the definition of labour income are also excluded because they are shown as a separate item in the national income accounts.

Wages and salaries include directors fees, bonuses, commissions, gratuities, income in kind, taxable allowances and retroactive wage payments. Wages and salaries are estimated on a gross basis, before deductions for employee contributions to income tax, unemployment insurance and pension funds. Remuneration accumulating over time, for example, retroactive payments, are accounted for in the month and year in which they are paid.

Supplementary labour income, defined as payments made by employers for the future benefit of their employees, comprises employer contributions to employee welfare and pension funds, worker compensation funds and unemployment insurance.

The labour cost survey provides information on the composition of total employee compensation and measures significance of fringe benefits. There is an increasing awareness by employers, employees, labour unions and governments of the growing importance of fringe benefits. In a general way, the benefits comprise a wide variety of direct and indirect costs for non-wage items incurred by employers on behalf of their employees. The survey is limited to employer expenditures which comprise employee compensation — wages and salaries, additional cash payments, such as severance pay, and costs to employers of compulsory and voluntary welfare and benefit plans.

Since 1967 yearly labour cost surveys covered one or more major industry divisions. Starting in 1976 the survey covered all industries. This all-industry survey was

a sample of 7,600 reporting units representing all components of the economy with 20 or more employees except agriculture, fishing and trapping, but including government administration at federal, provincial and local levels.

Information from the all-industry survey for 1976 shows that average total compensation amounted to \$14,383 for each employee; \$13,221 represented salaries, wages and other direct payments and the remaining \$1,162 represented employer payments to employee welfare and benefit plans. These figures represent costs to the employer rather than benefits received by the employees.

Wages, salaries and working conditions

7.5.3

Statistics on occupational wage and salary rates by industry, locality and for all Canada, with standard weekly hours of work, are compiled by Labour Canada and published in an annual series of separate booklets for a number of communities and in another booklet covering all Canada. These reports have the general title *Wage rates, salaries and hours of labour*. The statistics are based on an annual survey covering some 30,000 establishments in most major industries and apply to the last normal pay period

About 4.2 million workers in Canada were covered by employer sponsored pension plans in 1978, with contributions from both employers and employees of \$7.5 billion. In plans for more than 680,000 federal and provincial public servants, these funds are paid into consolidated government revenue. In trustee pension funds covering about 2.8 million workers, contributions of about \$4.7 billion were channelled directly into financial markets; with an annual cash flow of this size, trustee pension funds have become one of the largest pools of investment capital in Canada.

preceding October 1. Average wage and salary rates, number of employees, 1st and 9th deciles, 1st and 3rd quartiles and medians are shown for approximately 100 cross-industry office and service occupations, maintenance trades, labourers and 700 specific industry occupations. Information on concepts and methods of producing these statistics is given in the reports.

Table 7.29 presents average wage and salary data on October 1, 1977 and 1978. Hourly and weekly rates of pay are listed for 19 occupations; salaries are shown separately for men and for women engaged in several office occupations.

Table 7.19 gives summary data on working conditions of office and non-office employees in manufacturing industries and in all industries for 1976 and 1977. The percentages denote proportions of office and non-office employees in establishments reporting specific items to the total number of such employees in all establishments replying to the survey; they are not necessarily the proportions of employees covered by the various items tabulated.

Income maintenance

7.6

Pension plans

7.6.1

According to the Statistics Canada pensions data bank, 15,095 private pension plans (employer-sponsored plans) were operating in Canada at the beginning of 1978. These plans covered 4.2 million workers, an increase of 290,746 over the number covered two years earlier.

In terms of social and economic impact, one of the most significant factors is the extent of the labour force participation in employer-sponsored pension plans. The 4.2 million plan members represented nearly 48% of employed paid workers in the labour force including the armed forces. Excluded were unpaid family workers, the self-employed and the unemployed who were not eligible to participate in employer-sponsored pension plans.

The total plans were in both the public and private sectors. Although there were only 661 public sector plans these accounted for 44% of all plan members.

Of the 15,095 plans, 10,957 were funded with insurance companies, but these covered only 13% of the 4.2 million plan members. Small plans tended to be funded with insurance companies, but most large plans were funded on a trustee basis. Although only one-quarter of all plans were trustee, they covered two-thirds of all members, some 2.8 million. Plans with the largest coverage were for federal and provincial public servants, with contributions paid into government consolidated revenue funds and not held in cash or securities. While only 22 in number, these plans covered 681,000 members.

Contributions from both employers and employees totalled \$7.5 billion for 1978. About 63% or \$4.7 billion was paid into trustee pension funds which channel funds directly into the financial markets. With an annual cash flow of this magnitude, trustee pension funds have become one of the largest single pools of investment capital in the country, and reached a total of \$35.5 billion at book value by the end of 1978. Trustee pension funds are surveyed annually and the results are published in *Trustee pension plans. Financial statistics* (Statistics Canada Catalogue 74-201). A summary tabulation of the key financial data related to these funds is presented in Table 7.20.

Federal government annuities. The Government Annuities Act of 1908 was one of the first significant pieces of social legislation in Canada. It was designed to help Canadians provide for their retirement. However, by the 1960s newer social programs such as the Canada Pension Plan and Old Age Security covered the public more effectively. As a result, in 1967 the annuities sales program was discontinued.

The commission has been responsible for the administration of government annuities since 1970 and maintains existing annuity contracts. In 1975, legislation raised the interest rate to 7% on contracts not yet matured and a further percentage adjustment was provided when the annuity began to be paid. The balance of the annuities was about \$1,230 million on March 31, 1978. The total payments to people holding annuities was about \$89 million by March 31, 1978.

Other pension plans including the old age security program, the Canada and Quebec pension plans and other income maintenance programs are described in Chapter 8, Social security.

7.6.2 Unemployment insurance

Unemployment insurance provides short-term financial support to the unemployed. In addition it functions as an economic stabilizer in regions with high unemployment. Beginning in 1977, shorter work periods were required for eligibility of claimants living in areas of high unemployment than in regions where unemployment was less severe, and the length of time for receiving benefits was not based solely on how long a person had worked. Claimants could draw benefits for a maximum of 50 weeks depending on their work history and on economic conditions in their region.

Since its beginnings in 1940, the Unemployment Insurance (UI) program has been continually evolving. Amendments have brought in new categories of workers and benefits and the premiums paid by employers and workers have been raised periodically to meet changing economic conditions. However, the basic structure of the plan remained unaltered until 1968 when Parliament instructed the commission to review the program and recommend changes. The result was the Unemployment Insurance Act of 1971.

This act extended coverage to nearly all members of the labour force, including teachers, public servants, the armed forces and higher income earners. The only non-insurable workers were the self-employed and those who made less than the minimum insurable earnings, a figure adjusted annually. For the first time, claimants who worked 20 weeks in the last 52 could get illness benefits for as long as 15 weeks. Pregnant women with 10 weeks in the labour force during early pregnancy and working a total of 20 weeks, could collect up to 15 weeks of maternity benefits. Workers up to age 70 or those who had not yet applied for the Canada or Quebec pension plans were also covered.

Financing for the program underwent considerable changes. Until 1972, UI payments came from a fund to which employers and workers contributed on an equal

basis. A federal government grant of 20% of the employer/employee contribution made up the balance and paid the administration cost. In 1972 the financing was significantly changed. Premiums paid by employees and employers (in a ratio of 1:1.40) paid initial benefits up to a national unemployment rate of 4%, the cost of sickness, maternity and retirement benefits, and of administration. The government paid the cost of initial benefits over a 4% national unemployment rate and the total cost of extended benefits. In 1977 and 1978, revisions to the act transferred a portion of extended benefits to employee and employer premium costs and increased the level over which the government paid the costs of initial benefits. By 1978, the government's share of the program was \$2,264 million; the employer/employee share was \$2,505 million. In 1978 employees and employers were still paying substantial premiums, with employers paying as much as \$260 a year for each worker. These premiums financed about 60% of the \$4.5 billion program; the remainder was paid by the federal government. Over the years, the rules for eligibility became more suited to a changing labour market. The new variable entrance requirement introduced in 1977 made workers eligible for regular UI by working 10 to 14 weeks in the last 52, the exact number depending on the unemployment rate where they lived.

Money earned by claimants on regular UI was deducted from their cheques if it was over 25% of their weekly benefit. A person receiving \$110 a week, which was the average weekly benefit in 1978, could earn 25% of \$110 without financial penalty. In contrast, claimants on illness or maternity benefits had earnings deducted dollar for dollar. Sick leave collected after the two-week waiting period was also deducted. Benefits were not received for the first two weeks after UI accepted a claim.

Further amendments came in December 1978. One goal of the new legislation was to reduce disincentives to work. In January 1978, the benefit rate dropped from 66⅔% to 60% of weekly insurable earnings. As a result, the maximum weekly benefit was \$159 in 1979, compared to the \$177 previously scheduled for 1979.

To be insurable by UI, hourly paid and salaried workers had to be employed for at least 20 hours a week in 1979. In 1978, before the amendments, required earnings were only \$48 a week. Other workers, such as those paid on commission or by piece-work, had to earn at least \$79.50 a week in 1979 to be insurable.

Starting in mid-1979, longer work periods were required for some claimants to receive regular benefits. New members of the labour force and those who re-entered the labour market after an absence of a year or more had to work 20 weeks in the last 52 to be eligible for UI. In addition, claimants who had already collected all the benefits they

More than 800,000 persons in Canada collected unemployment insurance in 1978, receiving over \$4.5 billion in benefits.

were entitled to that year and who filed another claim had to work up to six weeks longer than for their first claim. The number of weeks depended on the duration of the first UI payment period. This new repeater provision did not apply to people living in regions where the unemployment rate was over 11.5%. For other claimants, the number of weeks of work required to be eligible for UI remained at 10 to 14 weeks.

In 1977, Parliament granted permission for developmental uses of UI funds, to help claimants make better use of their time while on UI, through training, work sharing, job creation and job experience training (JET).

From March 1978 to March 1979, 281,317 people took part in Canada manpower training programs. Of these, 76,830 were paid UI benefits. In the first job creation pilot project, launched in March 1979, UI claimants worked for government tourist services in New Brunswick.

Beginning in late 1977, UI funds were used to keep people working instead of being laid off. As of March 31, 1979, UI had tested 22 work-sharing pilot projects, involving about 3,000 people. Under the work-sharing scheme, when a company faced an

unavoidable layoff, UI could pay some benefits. If all employees worked four days a week instead of five, for example, the company would pay their wages for four days and UI would pay benefits for the fifth day.

By 1978, nearly 25,000 employers in Canada representing some 3.2 million workers paid lower UI premiums because their workers were covered under UI-approved wage-loss plans. If the plans paid wage-loss insurance to employees off work because of illness, those workers might not have to collect UI or later might collect UI for fewer weeks. In return employers paid lower UI premiums and this saving was shared with employees.

About 400 employers with over 400,000 workers had supplemental unemployment benefit plans. These plans allowed employers to pay additional benefits to their employees when they were off work because of temporary shortage of work, illness or pregnancy in addition to their UI benefits.

7.6.3 Compensation payments

Fatal occupational injuries and illnesses. Data on fatal occupational injuries and illnesses compiled by the labour department are collected from provincial worker compensation boards. On the average annually in the period 1968-77, 1,155 industrial workers sustained fatal injuries and illnesses. Of 924 fatality reports received in 1977, collisions, derailments or wrecks caused 273 deaths; being struck by or against an object, 153; falls and slips, 81; drowning, 36; being caught in, on or between objects or vehicles, 56; occupational illnesses, 101; fire, explosion, temperature extremes, 32; and the remaining 192 resulted from miscellaneous accidents. Table 7.22 presents statistics on fatal occupational injuries and illnesses in 11 industries for 1976-78. Occupational injuries and illnesses, extent of disability and amount of compensation paid are reported by province for 1977 and 1978 in Table 7.23.

7.7 Family incomes

Income distribution statistics for families and individuals in Canada have been collected in Statistics Canada surveys of consumer finances since 1952. In early years of the survey, the sample was restricted to non-farm families with the sample size ranging between 5,000 and 10,000 families. Because of this limited sample, the amount of reliable data which could be tabulated was restricted. Regional distributions could not be further broken down to give provincial distributions, and different personal or labour force characteristics could not be simultaneously cross-tabulated.

In 1966, coverage was extended to the farm population. Today the only individuals excluded from the survey are residents of Yukon and Northwest Territories, persons living in institutions, on Indian reserves and in military camps. The survey was carried out every two years from 1966 until 1972 when it became annual. The sample gradually increased to 26,000 family units in 1976 and now fluctuates between a large sample every second year and a small sample (12,000 or so) in intervening years. Provincial distributions are still released only from the larger surveys. However, a much wider variety of tabulations is now published owing to the use of the computer and increased scope of the survey. In addition, special tabulations can usually be provided on request. For a more detailed description of the survey and a wider variety of tabulations than shown here, consult the annual report *Income distributions by size in Canada* (Statistics Canada Catalogue 13-207).

In addition to this main series of reports, an annual series entitled *Income after tax, distribution by size in Canada* (Statistics Canada Catalogue 13-210) became available in 1971 and other reports have also been published on special topics related to the survey of consumer finances (for example, low income families, earnings and work experience, assets and debts of families, and health and education benefits).

7.7.1 Family and income concepts

Terms such as family, unattached individuals, and income are defined below as used in the annual survey of consumer finances.

Family. A family is defined as a group of individuals sharing a common dwelling unit and related by blood, marriage or adoption. This is often referred to as the economic family and is a broader definition than that employed by most demographic studies and the census, where a family is restricted to a married couple with or without unmarried children or a parent with unmarried children. Under the survey definition all relatives in a household, regardless of the degree of relationship, constitute a family.

Unattached individual. An unattached individual is a person living alone or in a household where he is not related to any other household member. The incomes of unattached individuals are different from those of families, particularly as a large portion of them are young entrants into the labour force or elderly persons living on pensions. Tabulations on unattached individuals are not included here but can be found in *Income distributions by size in Canada* (Statistics Canada Catalogue 13-207).

Income. Survey estimates relate to money income received from all sources before payment of taxes and such deductions as pension contributions and insurance premiums. This income may be composed of: wages and salaries; net income of the self-employed, such as partners in unincorporated businesses, professional practitioners and farmers; investment income including interest, dividends, and rents; transfer payments, for example old age pensions, family allowances; and other money income such as retirement pensions and alimony. Thus the concept of income is similar to personal income in the national accounts except that, first, it covers only private households in the 10 provinces and not the non-commercial institutions such as churches and charitable organizations and, second, the survey estimates do not include imputed income such as the value of farm products produced and consumed on the farm. On the other hand, the survey income concept is broader than the income defined for the calculation of income tax since it includes such non-taxable money income as the Guaranteed Income Supplement and pensions to the blind.

Income trends, 1961-78

7.7.2

Tables 7.30 and 7.31 provide an indication of how family incomes changed over a period of years. The sample coverage changed in 1966 to include farm families, but this does not seriously affect the comparability of the data with earlier years. Although the first part of Table 7.30 indicates that the average income (in current dollars) from 1961 to 1977 increased four to five times in all regions, these changes do not reflect the decrease in the purchasing power of the dollar. The second part of Table 7.30 does take this into account and gives the average incomes in constant 1971 dollars. Averages in all regions have still at least doubled in constant dollar terms since 1951.

Major sources of income. The percentage distribution of families by major source of income within quintiles is shown in Table 7.36 for 1961-77. For this type of analysis families are arranged in an ascending order by size of income and divided into five equal groups or quintiles. The characteristics (major source of income) are then tabulated for each quintile.

Table 7.36 shows that while government transfer payments have replaced wages and salaries as the major source of income for the largest group of families in the lowest quintile, families in the other quintiles are still largely dependent on wages and salaries as their principal income source.

Regional income distributions. Although the average family income for all of Canada was \$21,346 in 1978, as Table 7.32 shows the average for the different regions ranged from \$17,064 in the Atlantic provinces to \$23,327 in British Columbia.

Income distributions by family characteristics

7.7.3

Income distributions are influenced by a variety of personal and labour force characteristics of the family and its head. While only three summary classifications of family income are presented here relating to age and sex of head, education of head and combination of income recipients, data on other variables may be found in the annual report *Income distributions by size in Canada* (Statistics Canada Catalogue 13-207).

Incomes by age and sex of family head. Table 7.33 shows that the average income of families headed by males (\$20,947) was much greater than that of families headed by females (\$12,089) in 1977. For the younger groups, in fact, the male-headed average was more than twice the female-headed one. However, the average income of female-headed families 65-69 years of age (\$15,172) and 70 years and over (\$13,534) in 1977 exceeded the male-headed averages for those age groups (\$13,836 and \$10,870 respectively). While the average income for male-headed families increased with age to peak at 45-54, the average for female-headed families continued to increase into the 55-64 age group (largely because of the more frequent presence of adult children or other working family members in female-headed families).

Incomes by education of family head. Education of the family head is another factor greatly affecting family income. As Table 7.34 shows, the average income of families whose head had a university degree was much higher than that of families whose head had only primary school education.

Incomes by combination of income recipients. The number and combination of family members receiving income obviously affects the family income. In Table 7.35 families are first divided into two groups: husband-wife families and all other families. This latter group includes single parent families as well as groups of other relatives living together, for example brothers and sisters. As expected, the average income of husband-wife families was greater than for other families and the average for both groups increased with the number of income recipients.

7.8 Family spending

Household surveys of family spending provide information on consumer spending that can be related to family characteristics such as geographic location, family size and income level. In general, the survey program has consisted of two phases: the collection, by means of monthly record-keeping surveys throughout the reference year, of detailed information on family food expenditures; and the collection of information by annual recall of all family expenditure, income and changes in assets and liabilities. The record-keeping phase was not featured in all the survey programs.

A primary use of such surveys is to provide information for constructing, reviewing and revising the weights of the consumer price index. Initially these small-scale sample expenditure surveys carried out in selected Canadian urban centres since 1953 were designed to follow changes in the patterns of a well-defined group of middle-income urban families known as the "target group" of the consumer price index. In recent years, demand for expenditure statistics to serve other needs of government, business, welfare organizations and academic research has resulted in a widening in the scope and size of the surveys.

The most recent survey was carried out in February and March 1977 and published as *Urban family expenditure, 1976* (Statistics Canada Catalogue 62-547). In order to produce data for individual cities, the main sample was concentrated in eight major urban centres, with no restrictions imposed on family composition or income. For the 1976 survey the usable sample of 3,681 spending units was distributed in the cities of St. John's, Halifax, Montreal, Ottawa, Toronto, Winnipeg, Edmonton and Vancouver.

7.8.1 Family (spending unit) concept

The definition of a family or spending unit used in the family expenditure surveys is not the same as that of the census, or the economic family concept used in the surveys of consumer finances (see Section 7.7.1). The family or spending unit is defined as a group of persons dependent on a common or pooled income for the major items of expense and living in the same dwelling, or one financially independent individual living alone. Never-married sons or daughters living with their parents are considered as part of their parents' spending unit. In the great majority of cases the members of spending units of two or more are related by blood, marriage or adoption, and are thus consistent with the economic family definition employed in surveys of family income, that is "a group of

individuals sharing a common dwelling unit and related by blood, marriage or adoption''. However, according to the economic family definition, unrelated persons living in the same household would be counted as unattached individuals. Under the definitions in the expenditure survey, it is possible for two or more unrelated persons to comprise one family or spending unit.

Family expenditure patterns

7.8.2

In addition to trend comparisons it is useful to classify the expenditure patterns of families by a number of related variables such as family income, size of family and age of family head to determine the influence and effects of these various factors on family spending habits. This section provides a brief trend comparison of expenditure patterns for 1969-76 and a classification of family expenditures in 1976 by income quintiles, income being the most influential of all factors bearing on most items of family spending.

Expenditure trends, 1969-76. While the average income of survey families of two or more persons in the eight cities rose from \$10,560 in 1969 to \$20,772 in 1976, Table 7.37 indicates that there were few significant shifts in the overall expenditure patterns of these families during this period. Income taxes as a percentage of total expenditure increased from 15.6% in 1969 to 19.1% in 1976, and miscellaneous expenses from 1.4% to 2.2% (mainly in categories such as lottery tickets and interest on consumer debt). Categories whose share of total expenditure decreased over the seven years included food which fell from 17.5% in 1969 to 16.1% in 1976; medical and health care from 3.2% to 2.0% (resulting from changes in the coverage and financing of provincial health insurance plans); and clothing from 8.1% to 7.2%. All other major expenditure categories were within 0.5% of the proportions which they consumed of the family budget in the 1969 survey year.

Expenditure patterns by family income quintile, 1976. Table 7.38 shows the expenditure patterns in 1976 of survey families of two or more persons arranged by income quintiles (families ranked in ascending order of income size and then divided into five equal groups). For example, the average net income before taxes of the 20% of all families comprising the lowest quintile was \$7,906 as compared to an average of \$38,072 for the 20% of families forming the highest quintile.

As might be expected the percentages of total expenditure on specific items in the family budget showed some significant differences throughout the five income quintiles. The 20% of families in the lowest group spent on the average 45.9% of their total expenditures on food and shelter alone. The proportion ranged downward to only 25.1% for the 20% of families in the highest group. Another offsetting difference was the amount for personal taxes which represented only 6.1% of total expenditures for families in the lowest group compared with 25.1% for those in the highest quintile. Evidence of the better financial position of families in the higher quintiles, despite their much larger tax expenditures, can be seen from the net change in assets and liabilities for 1976 which ranged from an average decrease of \$363 for families in the lowest quintile group to an increase of \$4,127 for those in the highest group. Other interesting differences in the characteristics of families from the low- to high-income ranges as shown in Table 7.38 were the following percentages: home owners, from 35.4% of families to 82.4%; and car or truck ownership, from 46.9% to 93.6%. It should be noted also that the successive income classes are not homogeneous with respect to family size or number of full-time earners; average family size rose from 2.68 persons in the lowest class to 3.88 persons in the highest, and the number of full-time earners from 0.30 to 1.54 persons.

Family assets and debts

7.9

As a supplement to the 1977 survey of consumer finances, Statistics Canada collected data on family assets and debts in May 1977. This sample survey covered 13,479 households in which 29,158 individuals over 15 years old provided details on incomes received in 1976 and on their assets and debts as of spring 1977. Data on family

incomes, assets and debts were compiled from a usable sample of 12,734 family units. Family wealth or net worth referred to the value of total asset holdings less total debt. Total assets consist of liquid and other financial assets, estimated market value of home, estimated market value of automobiles and equity in vacation home, other real estate and business and professional interests; liquid assets consist of cash on hand, deposits in banks and other institutions, savings certificates and all types of bonds including Canada Savings Bonds; other financial assets include stock holdings, mortgage holdings, registered retirement savings plans, registered home-ownership savings plans and other miscellaneous financial assets including loans to other persons and businesses. Total debt consists of consumer debt, other personal debt and mortgage debt on home; consumer debt consists of money owed on credit cards, charge accounts and instalment debt, bank loans except student loans and loans against securities as collateral, and loans from sales finance and consumer loan companies, credit unions and caisses populaires.

Mean wealth of all family units was \$46,273 while their average income was \$15,849 in 1976. Both the distribution of wealth and mean wealth varied considerably according to family income group: for instance, family units with incomes under \$3,000 had a mean wealth of \$16,657 with 30% of these holding wealth of less than \$1,000 while family units with incomes of \$35,000 and over had a mean wealth of \$205,859 with 31.1% of these reporting wealth of \$150,000 and over (Table 7.39).

The composition of wealth at the national level indicates that the value of owner-occupied homes accounted for 47.9% of total asset holdings followed by 19.3% of assets held in the form of equity in business or professional interests. Only one-fifth of total asset holdings consisted of liquid and other financial assets. The composition of wealth again varied with the size of family income (see Table 7.40). On the debt side, mortgage debt on the home was the biggest financial liability; this liability, when expressed as a percentage proportion of total asset holdings, amounted to 10.8% at the national level compared to a maximum value of 18.9% for family units in the \$20,000-\$24,999 income group.

Some 59.6% of all family units owned their homes and the average market value of an owner-occupied home was estimated at \$43,843. Again, 54% of all home owners had a mortgage on the home and their average mortgage indebtedness amounted to \$18,285. Table 7.41 further shows the proportion of family units with selected types of assets and debts and their respective average amounts.

For more detailed data on the distribution and composition of wealth of families by their selected socio-demographic characteristics see *The distribution of income and wealth in Canada, 1977* (Statistics Canada Catalogue 13-570).

Sources

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- 7.2 Public Relations Branch, Department of Labour.
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- 7.5.1 - 7.5.4 Labour Division, Economic Statistics Field, Statistics Canada.
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- 7.6.1 Labour Division, Economic Statistics Field, Statistics Canada; Information Division, Canada Employment and Immigration Commission.
- 7.6.2 Benefit Group, Public Affairs, Canada Employment and Immigration Commission.
- 7.6.3 Occupational Safety and Health Branch, Department of Labour.
- 7.7 - 7.9 Consumer Income and Expenditure Division, Social Statistics Field, Statistics Canada.

Tables

not available

not appropriate or not applicable

— nil or zero

-- too small to be expressed

e estimate

p preliminary

r revised

certain tables may not add due to rounding

It should be noted that figures shown for the latest year are subject to revision, and that some figures for earlier years have been revised.

7.1 Estimates of the civilian labour force and its main components, annual averages 1972-78

Year	Civilian population (15 years of age and over) '000	Civilian labour force (15 years of age and over)			Persons not in the labour force (15 years of age and over) '000	Participation rate %	Unemployment rate %
		Employed '000	Unemployed '000	Total labour force '000			
1972r	15,186	8,344	553	8,897	6,289	58.6	6.2
1973r	15,526	8,761	515	9,276	6,250	59.7	5.5
1974r	15,924	9,125	514	9,639	6,285	60.5	5.3
1975r	16,323	9,284	690	9,974	6,349	61.1	6.9
1976r	16,707	9,479	727	10,206	6,500	61.1	7.1
1977	17,057	9,648	850	10,498	6,558	61.5	8.1
1978	17,381	9,972	911	10,882	6,499	62.6	8.4

7.2 Distribution of population in the labour force and non-labour force categories, by age and sex, 1972-78

Sex, age and year	Population '000	Labour force			Not in labour force '000	Partici- pation rate %	Unemploy- ment rate %
		Employed '000	Unem- ployed '000	Total '000			
Male							
1972r	7,479	5,460	337	5,797	1,682	77.5	5.8
1973r	7,642	5,678	295	5,973	1,669	78.2	4.9
1974r	7,834	5,870	293	6,163	1,671	78.7	4.8
1975r	8,026	5,903	391	6,294	1,732	78.4	6.2
1976r	8,209	5,965	404	6,369	1,840	77.6	6.3
1977	8,378	6,031	474	6,505	1,873	77.6	7.3
1978	8,531	6,148	502	6,650	1,881	77.9	7.6
15-24 years							
1972r	2,004	1,136	154	1,290	714	64.4	11.9
1973r	2,047	1,230	137	1,367	680	66.8	10.0
1974r	2,103	1,310	139	1,450	653	68.9	9.6
1975r	2,157	1,299	186	1,485	672	68.8	12.5
1976r	2,206	1,299	199	1,498	708	67.9	13.3
1977	2,248	1,317	231	1,548	701	68.8	14.9
1978	2,283	1,352	240	1,591	692	69.7	15.1
25+ years							
1972r	5,475	4,324	183	4,507	968	82.3	4.1
1973r	5,595	4,448	158	4,606	989	82.3	3.4
1974r	5,731	4,559	154	4,713	1,018	82.2	3.3
1975r	5,870	4,605	205	4,809	1,060	81.9	4.3
1976r	6,003	4,666	206	4,871	1,132	81.1	4.2
1977	6,129	4,714	243	4,957	1,172	80.9	4.9
1978	6,249	4,796	263	5,059	1,190	81.0	5.2
Female							
1972r	7,707	2,885	216	3,101	4,606	40.2	7.0
1973r	7,884	3,083	220	3,303	4,581	41.9	6.7
1974r	8,090	3,255	221	3,477	4,613	43.0	6.4
1975r	8,297	3,381	299	3,680	4,617	44.4	8.1
1976r	8,496	3,515	322	3,837	4,660	45.2	8.4
1977	8,679	3,617	377	3,994	4,686	46.0	9.4
1978	8,850	3,824	408	4,232	4,618	47.8	9.6
15-24 years							
1972r	1,992	934	99	1,032	960	51.8	9.6
1973r	2,033	1,000	101	1,102	931	54.2	9.2
1974r	2,087	1,064	104	1,168	919	56.0	8.9
1975r	2,141	1,077	139	1,217	924	56.8	11.4
1976r	2,188	1,094	150	1,244	944	56.8	12.1
1977	2,222	1,100	176	1,277	945	57.5	13.8
1978	2,247	1,141	184	1,324	923	58.9	13.9
25+ years							
1972r	5,715	1,951	117	2,068	3,647	36.2	5.7
1973r	5,851	2,083	119	2,202	3,649	37.6	5.4
1974r	6,003	2,192	117	2,308	3,695	38.5	5.1
1975r	6,156	2,304	160	2,463	3,693	40.0	6.5
1976r	6,308	2,421	172	2,593	3,715	41.1	6.6
1977	6,457	2,517	200	2,717	3,740	42.1	7.4
1978	6,603	2,683	225	2,908	3,695	44.0	7.7

7.3 Employment, unemployment and unemployment rates, by province, 1972-78

Year	Province				
	Nfld.	PEI	NS	NB	Que.
Employment ('000)					
1972 ^r	140	36	261	205	2,205
1973 ^r	151	39	275	214	2,330
1974 ^r	149	41	292	221	2,401
1975 ^r	152	42	292	224	2,434
1976 ^r	157	42	292	226	2,456
1977	161	44	294	226	2,473
1978	166	45	306	238	2,520
Unemployment ('000)					
1972	14	4 ^r	20	15 ^r	178
1973 ^r	17	...	19	18	169
1974 ^r	22	...	21	18	169
1975 ^r	25	4	24	24	214
1976 ^r	24	4	31	28	233
1977	30	5	35	35	284
1978	33	5	36	34	307
Unemployment rates (%)					
1972 ^r	9.2	10.8	7.0	7.0	7.5
1973	10.0	...	6.6 ^r	7.7	6.8
1974 ^r	13.0	...	6.8	7.5	6.6
1975 ^r	14.0	8.0	7.7	9.8	8.1
1976 ^r	13.4	9.6	9.5	11.0	8.7
1977	15.6	9.9	10.6	13.2	10.3
1978	16.4	9.9	10.6	12.6	10.9
	Ont.	Man.	Sask.	Alta.	BC
Employment ('000)					
1972 ^r	3,239	386	336	671	865
1973 ^r	3,380	402	343	706	920
1974 ^r	3,523	419	350	754	976
1975 ^r	3,576	417	365	788	995
1976 ^r	3,645	426	378	837	1,020
1977	3,714	429	392	868	1,047
1978	3,847	440	400	915	1,093
Unemployment ('000)					
1972	171 ^r	22	16	40	73 ^r
1973 ^r	152	19	12	39	66
1974	164 ^r	16	10	27	64 ^r
1975 ^r	242	20	11	34	92
1976 ^r	240	21	15	34	96
1977	280	27	18	41	97
1978	300	31	21	45	98
Unemployment rates (%)					
1972	5.0	5.4	4.4 ^r	5.6	7.8 ^r
1973	4.3	4.6 ^r	3.5 ^r	5.3	6.7
1974	4.4	3.6 ^r	2.8 ^r	3.5	6.2
1975	6.3	4.5	2.9	4.1	8.5
1976	6.2	4.7	3.9 ^r	4.0 ^r	8.6
1977	7.0	5.9	4.5	4.5	8.5
1978	7.2	6.5	4.9	4.7	8.3

7.4 Employees by industrial group, 1972-78

Industrial group (1970 Standard Industrial Classification)	Estimates in thousands					
	1972 ^r	1973 ^r	1974 ^r	1975 ^r	1976 ^r	1977
Agriculture	483	469	474	483	472	464
Other primary industries	214	224	229	220	235	241
Manufacturing	1,823	1,927	1,978	1,871	1,921	1,888
Construction	494	539	586	603	635	633
Trade	1,417	1,503	1,578	1,637	1,644	1,679
Transportation, communication and other utilities	734	775	791	812	824	819
Finance, insurance and real estate	398	424	460	474	496	531
Service	2,202	2,290	2,389	2,520	2,574	2,694
Public administration	579	610	640	665	678	699
All industries	8,344	8,761	9,125	9,284	9,479	9,648
						9,972

7.5 Employees by occupation, 1976-78

Occupation (1971 Census classification)	Estimates in thousands		
	1976 ^a	1977	1978
Managerial, administrative	639	665	745
Natural sciences, engineering and mathematics	322	320	337
Social sciences	121	136	141
Religion	24	27	29
Teaching	427	443	429
Medicine and health	428	423	440
Art, literature and recreation	113	121	134
Clerical	1,666	1,694	1,728
Sales	1,027	1,067	1,045
Service	1,154	1,221	1,290
Farming, horticulture and animal husbandry	495	494	502
Fishing, hunting and trapping	20	21	23
Forestry and logging	52	54	58
Mining and quarrying	54	53	56
Processing	383	363	384
Machining	243	244	256
Product fabricating, assembling and repairing	883	874	903
Construction trades	671	666	661
Transport equipment operation	389	387	418
Materials handling	245	242	250
Other crafts and equipment operation	125	133	142
All occupations	9,479	9,648	9,972

7.6 Persons 15 years of age and over, in the total labour force, by country of birth and region of residence, 1971

Country of birth	Canada ¹	Atlantic provinces	Quebec	Ontario	Prairie provinces	British Columbia
Total labour force	8,813,340	715,040	2,242,840	3,410,830	1,495,330	930,030
Born in Canada	7,049,575	682,545	1,989,720	2,430,865	1,241,715	688,765
Born outside Canada	1,763,770	32,495	253,115	979,960	253,610	241,265
US	124,405	7,575	18,020	45,390	30,460	22,590
Europe	1,429,985	21,130	194,180	830,880	199,030	182,160
Western Europe	280,070	3,905	42,465	142,290	48,965	41,680
Austria and Germany	144,730	1,450	13,355	75,920	29,170	24,400
Netherlands	85,774	1,875	2,795	52,020	15,515	13,425
France	26,405	315	18,895	4,415	1,510	1,200
Other Western Europe	23,100	265	7,425	9,935	2,770	2,655
Northern Europe	513,355	14,055	33,595	298,545	72,415	93,450
United Kingdom	450,850	12,835	30,185	268,380	60,270	78,110
Republic of Ireland	20,890	525	1,665	12,840	3,060	2,725
Scandinavia ²	30,275	645	1,275	9,475	8,480	10,265
Finland	11,345	50	465	7,850	610	2,345
Southern Europe	387,270	1,685	82,870	256,540	21,270	24,595
Italy	234,360	710	53,150	156,485	10,755	13,120
Greece	50,995	530	17,315	29,145	2,015	1,965
Yugoslavia	48,805	120	3,210	35,190	5,130	5,035
Portugal	40,400	220	6,345	27,085	2,885	3,855
Other Southern Europe	12,710	100	2,850	8,640	485	620
Eastern Europe	249,350	1,485	35,250	133,510	56,380	22,430
Poland	87,835	555	12,510	46,420	22,035	6,230
USSR	78,605	355	8,305	41,605	20,850	7,440
Hungary	42,875	280	7,065	24,210	6,490	4,730
Czechoslovakia	25,345	230	3,270	14,370	4,515	2,900
Other Eastern Europe	14,690	65	4,095	6,900	2,495	1,135
Asia	97,700	2,450	14,080	43,935	13,815	23,285
Other	111,680	1,340	26,830	59,755	10,310	13,230

¹Includes Yukon and Northwest Territories.²Includes Denmark, Iceland, Norway and Sweden.

7.7 Persons 15 years of age and over, in the labour force¹, by occupation², 1951-71 (based on the 1961 occupational classification)

Occupation	Labour force					
	1951		1961		1971 ³	
	No.	%	No.	%	No.	%
White collar workers	1,669,985	31.6	2,409,337	37.3	3,555,650	41.3
Managerial occupations	420,181	8.0	538,131	8.3	679,847	7.9
Professional and technical occupations	384,778	7.3	627,624	9.7	1,077,479	12.5
Clerical occupations	578,137	11.0	833,173	12.9	1,270,598	14.8
Sales occupations	286,889	5.4	410,409	6.4	527,726	6.1
Blue collar workers	1,654,767	31.4	1,871,562	29.0	2,200,156	25.6
Craftsmen, production process and related workers	1,303,559	24.7	1,527,129	23.6	1,792,607	20.8
Labourers	351,208	6.6	344,433	5.3	407,549	4.7
Transport and communication occupations	330,890	6.3	391,569	6.1	431,489	5.0
Service and recreation occupations	514,412	9.7	794,115	12.3	1,000,366	11.6
Primary occupations	1,042,639	19.8	826,072	12.8	642,573	7.5
Farmers and farm workers	826,093	15.6	648,910	10.0	500,356	5.8
Loggers and related workers	100,854	1.9	78,874	1.2	52,754	0.6
Fishermen, trappers and hunters	51,023	1.0	34,267	0.5	27,078	0.3
Miners, quarrymen and related workers	64,669	1.2	64,021	1.0	62,385	0.7
Occupations not stated	63,946	1.2	165,501	2.6	778,505	9.0
Total, occupations	5,276,639	100.0	6,458,156	100.0	8,608,739	100.0

¹The labour force figures exclude a few persons seeking work who have never been employed.

²Excludes Yukon and Northwest Territories.

³The 1971 occupational data on a 1961 base was obtained from a recoded sample of the 1971 experienced labour force.

7.8 Population 15 years and over by labour force activity and sex, showing age groups for Yukon and Northwest Territories, 1976

Labour force activity and sex		Age group			Total ¹
		15-24	25-64	65 and over	
Yukon					
Population 15 years and over	M	2,315	5,655	375	8,355
	F	2,215	4,585	255	7,055
	T	4,530	10,250	630	15,410
Total labour force	M	1,670	5,030	115	6,810
	F	1,385	2,730	30	4,145
	T	3,055	7,760	140	10,950
Employed	M	1,390	4,660	110	6,175
	F	1,145	2,480	25	3,650
	T	2,535	7,140	135	9,825
Unemployed	M	280	355	—	630
	F	240	255	5	490
	T	520	610	5	1,125
Not in the labour force	M	655	630	265	1,545
	F	840	1,850	225	2,915
	T	1,495	2,480	490	4,460
Northwest Territories					
Population 15 years and over	M	4,485	8,940	600	14,020
	F	4,195	7,425	535	12,160
	T	8,680	16,365	1,135	26,175
Total labour force	M	3,030	7,660	190	10,885
	F	2,105	3,880	100	6,075
	T	5,135	11,540	290	16,965
Employed	M	2,785	7,420	190	10,395
	F	1,895	3,700	100	5,690
	T	4,680	11,120	290	16,085
Unemployed	M	235	245	5	485
	F	210	180	—	385
	T	445	425	5	875
Not in the labour force	M	1,455	1,265	405	3,135
	F	2,095	3,550	435	6,085
	T	3,550	4,815	840	9,210

¹Totals may not add due to rounding.

7.9 Job vacancies, all categories¹, by province, annual averages 1973-78, and job vacancies (thousands), and vacancy rates² per 1,000 jobs, by quarter 1977 and 1978

Item and year	Nfld.	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	Canada ³
Job vacancies										
Annual average										
1973	1.5	2.0	2.2	22.6	33.1	4.2	2.1	8.0	9.4	85.8
1974	1.4	2.4	2.2	21.4	41.0	5.7	4.1	13.1	9.8	101.7
1975	1.0	1.5	1.8	15.3	23.0	4.1	3.5	8.1	4.5	63.3
1976	0.6	1.1	1.2	11.9	17.6	2.9	2.5	9.2	4.1	51.4
1977	0.5	0.9	0.8	9.5	17.5	2.0	1.7	7.2	4.0	44.4
1978	0.5	1.1	0.7	9.3	17.1	1.9	1.5	7.8	4.1	44.5
By quarter										
1977										
1st quarter	0.5	0.6	0.7	9.3	14.0	1.6	1.8	7.2	3.5	39.7
2nd "	0.5	1.3	0.9	9.8	20.7	2.7	1.9	7.7	3.9	49.7
3rd "	0.5	1.2	0.9	11.4	20.4	2.3	2.0	8.3	5.3	52.7
4th "	0.4	0.6	0.7	7.4	14.7	1.4	1.0	5.6	3.4	35.6
1978										
1st quarter	0.4	1.0	0.6	8.1	14.6	1.4	1.2	6.9	3.5	37.9
2nd "	0.6	1.2	0.9	10.0	16.9	2.2	1.6	7.1	4.8	45.6
3rd "	0.4	1.4	0.9	10.5	18.3	2.2	1.6	9.8	4.6	50.0
4th "	0.4	1.0	0.7	8.8	18.8	1.9	1.4	7.3	3.8	44.3
Vacancy rates										
By quarter										
1977										
1st quarter	4	2	4	4	4	5	7	10	4	5
2nd "	3	5	5	4	6	7	7	11	4	6
3rd "	3	4	4	5	6	6	7	11	5	6
4th "	3	2	3	3	4	4	4	8	4	4
1978										
1st quarter	3	4	3	4	4	4	4	9	4	4
2nd "	4	4	4	4	5	6	6	9	5	5
3rd "	3	5	4	4	5	6	5	12	4	5
4th "	3	3	3	4	5	5	5	9	4	5

¹Includes full-time, casual, part-time, seasonal and temporary jobs.

²A rate is obtained by expressing the number of vacancies per 1,000 existing jobs in all industries, except agriculture, fishing and trapping, domestic service and the non-civilian component of public administration and defence.

³Includes Prince Edward Island, Yukon and Northwest Territories.

7.10 Annual average index numbers¹ of employment, by industrial division, 1974-78, and monthly indexes 1977 and 1978

Year and month	For- estry	Mining (incl. milling)	Manu- factur- ing	Con- struc- tion	Trans- portation, commu- nication and other utilities	Trade	Finance, insur- ance and real estate	Service*	Indus- trial com- posite
Averages									
1974	87.4	115.5	133.8	117.1	124.6	165.7	167.3	224.0	142.8
1975	76.0	114.1	126.3	117.1	125.8	168.5	175.0	231.9	141.1
1976	76.2	118.3	128.1	113.8	128.7	172.2	183.9	242.8	144.1
1977	78.0	122.8	126.3	110.9	130.1	169.6	194.5	250.1	144.3
1978	81.4	119.1	127.6	99.6	132.5	173.7	199.2	260.7	146.5
1977									
January	65.4	119.7	123.5	97.0	126.0	170.4	189.4	235.8	140.1
February	64.7	119.6	123.1	96.7	126.0	168.3	190.3	237.7	139.7
March	57.7	120.4	124.3	98.2	126.2	167.7	191.4	241.6	140.4
April	56.3	119.4	124.7	104.9	127.9	168.8	191.5	245.4	141.7
May	72.8	123.8	128.3	114.7	131.1	169.9	195.0	251.3	145.5
June	91.3	128.3	129.9	119.6	133.9	169.7	197.2	257.9	148.2
July	92.5	129.3	127.9	121.0	134.4	165.0	197.1	258.0	146.9
August	91.6	128.1	129.4	123.5	134.1	165.9	195.8	262.1	148.0
September	93.3	121.0	128.1	122.0	133.8	168.8	195.6	257.0	147.1
October	89.1	122.1	127.3	120.5	131.9	171.7	196.8	254.7	146.7
November	83.7	121.7	126.1	113.3	128.4	174.5	197.3	253.8	145.4
December	77.1	119.7	123.1	98.9	127.2	174.8	196.4	245.9	142.2
1978P									
January	67.7	120.8	122.9	89.3	125.9	171.3	195.7	247.0	140.9
February	68.0	120.0	123.2	87.0	127.4	169.4	196.4	251.2	141.3
March	61.9	115.3	124.8	89.2	127.5	170.3	197.0	252.8	142.0
April	59.9	111.5	125.5	94.2	129.3	171.7	197.2	255.2	143.1
May	79.6	115.6	128.4	103.5	133.1	172.3	198.0	262.6	146.9
June	96.6	122.3	130.0	108.8	136.7	173.3	199.7	269.6	149.9
July	97.6	128.1	129.0	108.2	136.9	170.3	201.6	270.9	149.4
August	101.0	128.6	130.9	108.2	135.9	172.0	201.3	271.2	150.4
September	94.6	117.4	130.3	109.8	137.1	174.3	200.3	266.5	149.9
October	90.5	117.5	130.0	108.0	134.9	177.5	200.1	264.9	149.6
November	83.7	117.0	129.3	100.2	133.7	180.8	201.1	260.6	148.7
December	75.1	115.0	127.3	88.5	131.5	181.7	201.5	256.2	146.3

¹Indexes are calculated as at the last pay period of each month (1961=100).

*Consists mainly of hotels, restaurants, laundries, dry-cleaning establishments and recreational and business services.

7.11 Annual average index numbers¹ of employment, by industrial division and group, 1974-78

Industry	1974 ¹	1975	1976	1977	1978
FORESTRY	87.4	76.0	76.2	78.0	81.4
MINING (incl. milling)	115.5	114.1	118.3	122.8	119.1
Metals	107.6	109.1	109.7	108.5	94.2
Gold	34.6	35.5	31.4	28.0	29.4
Copper-gold-silver	147.4	144.7	138.4	140.0	128.9
Iron	168.9	175.5	190.9	182.2	144.1
Mineral fuels	120.5	126.6	131.1	148.4	163.5
Coal	76.6	87.0	85.0	93.6	94.8
Crude petroleum and natural gas	164.0	165.7	176.7	202.4	231.2
Non-metals (except fuels)	140.2	117.6	139.1	143.6	139.5
Asbestos	117.3	83.9	117.9	123.7	115.7
MANUFACTURING	133.8	126.3	128.1	126.3	127.6
Durable goods	149.4	139.8	140.3	137.8	140.1
Non-durable goods	121.1	115.5	118.2	116.9	117.5
Foods and beverages	110.9	107.5	110.2	111.2	111.6
Slaughtering and meat processing	107.5	106.6	108.1	111.5	107.7
Dairy products	94.4	91.0	85.9	83.9	85.0
Fish products	147.2	129.8	152.4	162.7	176.6
Fruit and vegetable canners and preservers	117.1	112.7	110.1	108.2	111.7
Grain mill products	109.7	110.6	109.5	107.8	107.8
Biscuits	100.0	98.4	96.0	95.0	91.7
Bakeries	85.3	84.7	87.3	86.2	84.5
Confectionery	94.8	87.3	86.7	92.5	95.6
Soft drinks	115.3	118.0	130.1 ¹	130.9	129.0
Distilleries	116.7	115.8	109.8	110.0	103.1
Breweries	115.9	117.1	118.5	121.1	120.4
Tobacco processing and products	91.2	85.2 ¹	86.3	95.8	80.8
Rubber products	120.8	123.0	125.9	127.5	124.1
Leather products	91.5	87.4	86.2	74.9	78.9
Shoes (except rubber)	81.8	78.4	79.6	68.5	73.3
Luggage, handbags and small leather goods	132.4	123.2	112.7	97.6	99.3
Textile products	126.2	112.3	110.7	105.9	107.2
Cotton yarn and cloth	72.3	60.2	63.4	60.8	66.7
Woolen yarn and cloth	88.9	76.6	72.2	68.6	66.8
Synthetic textiles	128.9	110.8	100.3	98.2	95.5
Knitting mills	116.8	114.0	108.5	99.2	96.6
Hosiery	83.6	68.8	66.8	62.4	61.7
Other knitting mills	136.8	140.6	132.9	120.7	116.8
Clothing	113.1	110.7	111.6	107.6	108.2
Men's clothing	128.2	123.9	125.5	121.4	121.5
Women's clothing	116.2	115.6	116.4	112.0	113.6
Wood products	132.4	117.2	130.2	130.8	134.9
Saw, shingle and planing mills	135.4	113.1	131.2	136.4	144.2
Furniture and fixtures	157.1	138.5	141.0	125.3	125.2
Household furniture	166.7	144.3	150.5	130.4	133.7
Paper and allied industries	133.0	117.2	128.3	128.9	129.4
Pulp and paper mills	127.1	108.1	123.7	127.7	127.9
Printing, publishing and allied industries	120.8	122.4	123.4	123.0	125.0
Commercial printing	128.8	128.9	131.9	130.9	135.2
Printing and publishing	107.6	109.4	109.4	110.7	109.2
Primary metal industries	138.3	135.0	128.1	130.8	132.9
Iron and steel mills	152.7	149.9	144.6	144.5	152.8
Iron foundries	155.1	142.4	136.7	133.2	133.8
Smelting and refining	115.9	116.0	104.4	112.2	104.9
Metal fabricating industries	148.4	139.1	139.7	135.0	134.3
Fabricated structural metals	113.1	118.6	115.5	106.7	95.5
Ornamental and architectural metals	149.1	131.1	138.2	131.5	133.3
Metal stamping, pressing and coating	155.2	140.7	146.8	146.9	147.1
Wire and wire products	152.0	137.6	136.7	139.0	141.2
Hardware, tools and cutlery	192.0	174.7	179.0	162.6	170.7
Heating equipment	104.4	99.0	101.9	103.2	103.6
Miscellaneous metal fabricating	152.2	136.4	134.7	130.9	131.1
Machinery (except electrical)	174.3	171.6	167.3	163.1	164.1
Agricultural implements	152.4	162.2	155.3	143.4	133.8
Miscellaneous machinery and equipment	185.4	178.5	176.1	173.2	177.8
Office and store machinery	141.6	150.3	141.1	141.6	144.9
Transportation equipment	161.2	151.1	156.0	159.0	168.9
Aircraft and parts	74.9	67.6	64.6	70.7	85.7
Motor vehicles	218.9	200.3	216.2	226.3	235.5
Assembling	202.2	186.4 ¹	200.2	218.4	226.0
Parts and accessories	205.4	184.2	206.5	217.5	228.9
Shipbuilding and repairing	100.9	111.4	106.4	95.2	91.0
Electrical products	154.2	140.0	137.2	127.9	126.9
Major appliances (incl. non-electrical)	120.8	100.1	102.8	97.4	98.8
Household radios and televisions	162.3	120.6	128.2	104.9	100.2
Communications equipment	169.5	147.7	137.8	129.0	131.9
Non-metallic mineral products	132.4	126.5	124.0	121.3	120.5
Concrete products	158.2	145.6	138.4	127.0	122.1
Clay products	103.0	97.1	97.2	97.3	92.0
Glass and glass products	138.3	129.3	131.3	128.7	129.3
Petroleum and coal products	113.5	115.0	114.9	120.0	128.9
Petroleum refineries	100.2	100.3	94.7	96.2	98.2
Chemicals and chemical products	123.7	124.6	127.0	128.8	129.7
Pharmaceuticals and medicines	170.3	164.5	163.0	163.6	162.1
Paints and varnishes	114.6	112.7	118.1	112.1	111.4
Soap and cleaning compounds	105.6	109.8	106.5	105.5	106.9
Industrial chemicals	109.9	114.9	122.7	126.6	132.3
Miscellaneous manufacturing industries	176.0	160.9	163.7	157.5	156.5

7.11 Annual average index numbers¹ of employment, by industrial division and group, 1974-78 (concluded)

Industry	1974 ^r	1975	1976	1977	1978
CONSTRUCTION	117.1	117.1	113.8	110.9	99.6
Building	124.7	121.5	117.6	111.8	103.9
General contractors	99.9	94.2	93.9	88.6	79.9
Special trade contractors	150.8	150.3	141.5	135.0	127.8
Engineering	104.1	109.7	107.3	110.1	92.7
Highways, bridges and streets	83.2	83.6	77.7	74.2	69.0
Other engineering	130.4	142.5	144.2	152.9	127.1
TRANSPORTATION, COMMUNICATION AND OTHER UTILITIES	124.6	125.8	128.7	130.1	132.5
Transportation	114.1	114.1	113.5	113.7	115.7
Air transport and services	206.0	213.1	211.8	208.6	224.8
Water transport and services	95.4	91.1	92.0	91.9	94.0
Railway transport	87.6	84.9	80.3	79.5	79.0
Truck transport	149.3	141.5	139.3	144.1	146.2
Bus transport, interurban and rural	156.8	161.7	171.1 ^r	174.6	165.5
Urban transit	132.8	143.8	154.9	159.4	165.3
Highway and bridge maintenance	114.4	119.7	121.6	120.7	121.4
Storage	111.4	112.2	112.8	111.4	113.8
Grain elevators	96.2	100.6	103.0	101.7	100.4
Other storage and warehousing	153.6	144.9	140.6	138.8	151.6
Communication	151.7	151.7	166.8	169.0	170.6
Radio and television broadcasting	153.0	162.9	177.4	181.3	188.4
Telephone	147.7	150.9	157.5	162.4	169.3
Telegraph and cable	76.6	78.9	74.0	71.8	71.5
Post office	182.3	171.2	209.0	206.6	195.4
ELECTRIC POWER, GAS AND WATER	133.2	141.3	142.4	148.5	153.7
Electric power	137.8	147.7	148.9	156.9	165.5
Gas distribution	113.8	124.1	125.4	127.1	129.4
TRADE	165.7	168.5	172.2	169.6	173.7
Wholesale	154.6	157.1	158.8	155.3	154.7
Retail	171.7	174.6	179.3	177.4	184.3
Food stores	164.1	170.8	175.6	177.8	184.1
Department stores	167.4	165.1	166.9	163.2	175.9
Variety stores	153.0	147.7	148.5	144.5	150.8
Automotive product stores	184.9	191.1	195.8	191.0	190.8
FINANCE, INSURANCE AND REAL ESTATE	167.3	175.0	183.9	194.5	199.2
Financial institutions	180.7	189.9	199.7	212.8	223.1
Insurance and real estate	149.1	154.8	162.5	169.3	168.8
Insurance carriers	119.0	120.6	124.5	135.0	134.1
SERVICE	224.0	231.9	242.8	250.1	260.7
Recreational services	197.8	204.6	230.5	231.3	228.9
Business services	271.2	286.1	294.7	299.5	311.9
Personal services	194.8	202.1	210.6	220.8	236.1
Miscellaneous services	273.9	277.0	285.0	291.2	295.4
Industrial composite	142.8	141.1	144.1	144.3	146.5

¹Indexes refer to the last week of each month (1961 = 100).

7.12 Annual average index numbers¹ of employment for industrial composite, by province, 1974-78, and monthly indexes 1977 and 1978

Year and month	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	Canada
Averages											
1974	139.5	152.0	130.2	134.4	129.9	147.5	128.4	130.0	163.1	167.2	142.8
1975	135.5	149.9	128.9	136.1	128.5	144.2	130.1	137.0	169.6	161.2	141.1
1976	134.6	148.1	128.5	135.0	129.9	147.1	128.2	142.1	184.9	167.5	144.1
1977	131.8	151.6	127.1	131.1	127.6	148.0	125.4	142.9	193.3	170.7	144.3
1978	126.3	153.8	133.3	134.9	127.0	151.2	124.9	143.4	203.3	173.7	146.5
1977											
January	120.1	129.0	121.4	122.2	125.0	144.0	122.4	137.9	184.9	165.2	140.1
February	123.5	129.5	120.8	120.8	124.0	143.6	121.8	138.3	185.9	166.1	139.7
March	122.0	128.7	120.7	120.7	124.6	144.0	122.2	137.9	187.6	169.4	140.4
April	125.9	136.7	123.3	122.5	125.5	145.6	123.5	139.6	189.2	168.9	141.7
May	133.6	160.5	127.2	131.3	128.7	149.3	127.1	144.6	193.8	170.9	145.5
June	142.1	169.1	130.8	140.9	131.4	151.3	129.2	147.5	197.6	173.7	148.2
July	141.9	174.5	130.7	141.8	129.8	149.3	127.9	147.1	197.2	174.8	146.9
August	142.8	176.0	131.7	141.1	130.9	150.5	127.7	146.9	197.9	176.3	148.0
September	137.5	165.3	129.9	138.5	130.0	150.1	127.8	145.6	197.8	174.6	147.1
October	135.3	155.3	130.2	134.6	128.9	150.6	127.2	144.6	197.9	173.3	146.7
November	131.8	151.4	130.6	132.0	127.2	150.3	125.5	144.1	197.0	169.4	145.4
December	125.1	143.7	127.3	126.9	124.6	147.2	122.3	140.3	192.9	165.8	142.2
1978											
January	119.1	132.4	125.1	122.6	122.9	146.7	121.1	136.2	193.0	163.9	140.9
February	117.2	136.4	125.2	122.8	122.6	146.8	120.7	136.6	193.3	168.6	141.3
March	111.5	136.8	124.4	123.2	122.9	147.5	120.8	137.4	194.7	172.3	142.0
April	111.7	148.9	126.6	124.6	123.9	148.7	122.5	138.9	196.0	172.6	143.1
May	121.5	162.8	132.0	137.2	127.4	151.9	125.0	143.2	201.8	174.4	146.9
June	131.0	169.2	137.6	144.7	130.8	154.1	125.8	147.6	207.0	176.2	149.9

7.12 Annual average index numbers¹ of employment for industrial composite, by province, 1974-78, and monthly indexes 1977 and 1978 (concluded)

Year and month	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	Canada
1978 (concluded)											
July	139.9	168.0	138.6	145.5	129.4	152.8	127.1	147.3	208.9	177.1	149.4
August	139.8	168.9	139.5	144.3	130.4	153.9	127.9	147.4	209.6	179.1	150.4
September	138.6	162.2	140.8	144.5	129.9	153.4	128.4	148.3	208.8	177.7	149.9
October	132.6	158.7	138.2	141.4	129.4	153.8	128.3	147.7	210.1	176.1	149.6
November	127.6	150.5	137.6	137.3	128.3	153.6	126.8	147.3	209.6	174.4	148.7
December	124.7	150.6	133.7	131.0	125.7	151.6	124.1	143.0	206.9	172.5	146.3

¹Indexes refer to the last week of each month (1961 = 100).

7.13 Annual average index numbers¹ of employment for industrial composite, by metropolitan area, 1974-78 and monthly indexes 1977 and 1978

Year and month	Montreal	Quebec	Toronto	Ottawa-Hull	Hamilton	Windsor	Winnipeg	Vancouver
Average								
1974	130.9	137.4	154.5	168.5	136.5	159.8	130.0	169.1
1975	130.8	137.2	152.4	167.1	134.1	148.1	132.4 ^f	166.3
1976	132.3	138.4	154.9	170.8	134.3	163.0	132.4	168.8
1977	127.6	137.8	155.9	173.1	132.9	172.0	130.3	169.7
1978	125.8	136.7	160.6	179.6	134.1	175.1	130.2	169.3
1977								
January	127.7	136.4	152.4	166.0	129.0	167.0	128.4	167.4
February	126.8	134.3	152.6	165.5	129.1	166.1	127.5	167.9
March	127.7	135.4	152.5	169.0	128.8	170.5	128.3	171.5
April	128.2	137.2	154.2	170.0	132.1	171.0	128.9	169.3
May	129.6	141.2	157.1	174.4	134.6	173.7	131.9	171.4
June	130.6	142.2	158.6	177.2	136.6	176.6	133.7	171.9
July	127.8	139.1	155.5	175.2	134.8	169.3	131.2	172.8
August	128.4	140.6	156.8	176.8	135.6	170.2	131.0	174.8
September	127.5	138.8	157.8	175.9	134.3	173.2	131.8	170.8
October	127.1	137.3	158.6	176.8	133.5	176.2	131.8	168.9
November	125.9	136.6	159.1	176.3	133.8	178.3	130.8	166.9
December	124.3	134.0	156.0	174.4	132.5	177.0	128.0	163.1
1978								
January	124.1	132.1	156.0	173.7	130.5	173.0	127.6	161.4
February	123.5	132.8	156.4	174.6	130.3	172.8	127.2	166.6
March	124.1	133.6	157.4	175.5	131.3	171.3	127.4	169.4
April	124.9	134.0	158.4	176.3	132.9	170.9	129.0	169.6
May	126.9	137.0	160.6	180.8	133.5	174.6	130.3	169.8
June	128.5	140.1	162.6	183.4	135.9	177.4	129.2	170.5
July	126.3	137.8	160.6	180.9	133.6	173.8	130.4	171.8
August	126.7	137.3	161.7	182.1	135.1	174.2	131.4	172.9
September	126.5	138.7	162.5	182.1	136.9	177.5	132.8	172.4
October	126.7	140.6	163.7	182.8	137.0	180.6	133.5	170.3
November	126.5	139.8	164.6	181.8	137.0	179.4	132.8	169.5
December	125.2	136.7	162.3	181.4	135.6	176.2	130.3	167.9

¹Indexes refer to the last week of each month (1961 = 100).

7.14 Annual index numbers of employment and average weekly earnings, by industry, province and urban area, 1976-78

Industry, province and urban area	Employment (1961 = 100)			Average weekly wages and salaries (dollars)		
	1976	1977	1978	1976	1977	1978
INDUSTRY						
Forestry	76.2	78.0	81.4	287.36	312.81	326.48
Mining (incl. milling)	118.3	122.8	119.1	317.13	348.23	376.40
Manufacturing	128.1	126.3	127.6	241.19	266.04	285.67
Durable goods ¹	140.3	137.8	140.1	257.46	284.66	305.97
Non-durable goods ¹	118.2	116.9	117.5	225.60	248.39	266.13
Construction	113.8	110.9	99.6	331.02	369.88	389.64
Transportation, communication and other utilities	128.7	130.1	132.5	262.02	291.15	313.28
Trade	172.2	169.6	173.7	176.59	190.96	201.79
Finance, insurance and real estate	183.9	194.5	199.2	213.71	229.57	248.43
Service	242.8	250.1	260.7	160.49	171.28	180.00
Industrial composite	144.1	144.3	146.5	228.03	249.95	265.37
PROVINCE (industrial composite)						
Newfoundland	134.6	131.8	126.3	221.63	242.43	248.36
Prince Edward Island	148.1	151.6	153.8	170.88	187.73	196.72
Nova Scotia	128.5	127.1	133.3	193.21	212.09	223.72
New Brunswick	135.0	131.1	134.9	202.56	223.34	232.89

7.14 Annual index numbers of employment and average weekly earnings, by industry, province and urban area, 1976-78 (concluded)

Industry, province and urban area	Employment (1961 = 100)			Average weekly wages and salaries (dollars)		
	1976	1977	1978	1976	1977	1978
PROVINCE (industrial composite) (concluded)						
Quebec	129.9	127.6	127.0	222.41	244.79	262.82
Ontario	147.1	148.0	151.2	228.72	249.46	264.04
Manitoba	128.2	125.4	124.9	208.55	226.29	239.71
Saskatchewan	142.1	142.9	143.4	214.87	235.56	250.44
Alberta	184.9	193.3	203.3	236.89	261.96	276.32
British Columbia	167.5	170.7	173.7	259.52	284.13	301.26
URBAN AREA (industrial composite)						
Corner Brook, Nfld.	107.7	109.4	113.3	228.57	252.34	259.31
St. John's, Nfld.	161.6	154.4	159.9	198.25	216.80	226.29
Halifax, NS	145.7	142.3	146.1	190.41	208.41	220.62
Sydney, NS	87.4	86.3	94.2	217.58	235.49	249.97
Moncton, NB	150.2	144.3	149.9	185.20	201.65	213.60
Saint John, NB	133.2	128.1	128.3	214.61	233.14	244.67
Chicoutimi, Que.	99.0	120.3	123.5	251.18	269.68	288.57
Drummondville, Que.	122.1	121.0	126.8	182.03	202.36	219.07
Granby, Que.	117.2	118.5	125.0	183.66	202.21	214.79
Montreal, Que.	132.3	127.6	125.8	224.18	243.88	261.86
Ottawa, Ont.-Hull, Que.	170.8	173.1	179.6	208.62	225.28	239.64
Quebec, Que.	138.4	137.8	136.7	200.87	222.19	240.99
Rouyn-Noranda, Que.	94.6	89.0	85.5	253.05	295.10	294.24
Saint-Hyacinthe, Que.	128.0	125.2	124.3	177.69	197.28	217.29
Saint-Jean, Que.	137.3	128.8	127.7	192.50	213.61	226.72
Saint-Jérôme, Que.	150.3	145.0	157.2	194.58	211.64	227.07
Shawinigan, Que.	81.7	83.9	88.3	231.54	259.07	278.09
Sherbrooke, Que.	130.0	133.9	134.4	190.74	202.80	216.22
Sorel, Que.	190.8	185.0	187.8	259.34	287.09	316.66
Thetford Mines, Que.	117.1	119.7	128.8	251.65	281.93	301.91
Trois-Rivières, Que.	120.5	117.6	119.5	220.13	237.75	257.85
Valleyfield, Que.	144.7	143.4	147.7	233.90	252.50	273.79
Barrie, Ont.	228.7	235.2	236.0	192.82	206.82	223.51
Bellefleur, Ont.	141.6	142.2	147.3	192.75	210.17	221.64
Brampton, Ont.	362.2	357.0	325.9	228.79	245.04	262.50
Brantford, Ont.	152.5	154.8	162.0	218.12	232.88	246.33
Brockville, Ont.	140.7	135.3	134.6	221.39	242.31	256.47
Chatham, Ont.	183.1	208.6	208.8	228.10	264.56	272.16
Cornwall, Ont.	120.9	124.9	126.7	215.81	237.74	256.85
Guelph, Ont.	160.7	159.8	162.1	207.05	225.02	239.69
Hamilton, Ont.	134.3	132.9	134.1	237.95	257.83	276.05
Kingston, Ont.	139.5	137.4	140.4	212.85	229.39	240.09
Kitchener, Ont.*	174.1	169.3	173.7	202.21	222.00	237.07
London, Ont.	134.7	134.7	143.7	213.28	229.99	244.97
Midland, Ont.	186.8	182.3	173.1	186.55	208.19	219.94
Niagara Falls, Ont.	122.4	126.0	129.9	203.04	218.63	232.75
North Bay, Ont.	131.9	141.6	148.6	218.11	232.51	237.06
Orillia, Ont.	154.5	145.1	136.2	174.46	189.88	208.34
Oshawa, Ont.	149.4	155.6	164.0	266.68	289.87	305.65
Owen Sound, Ont.	167.6	164.0	162.9	192.15	211.23	220.54
Pembroke, Ont.	114.6	117.9	125.2	171.06	189.90	200.43
Peterborough, Ont.	140.6	132.5	136.0	225.25	239.18	250.22
Port Hope, Ont.	183.4 [†]	189.1	188.7	222.99	245.28	263.32
St. Catharines, Ont.	142.2	142.8	145.9	254.17	280.76	304.71
St. Thomas, Ont.	207.3	226.0	237.2	220.88	256.95	278.62
Sarnia, Ont.	153.1	161.3	160.5	284.67	320.17	337.77
Sault Ste Marie, Ont.	136.3	136.2	141.5	254.11	278.00	295.97
Stratford, Ont.	180.7	183.3	189.3	189.78	206.48	221.35
Sudbury, Ont.	117.1	113.9	89.3	259.11	284.02	272.22
Thunder Bay, Ont.	151.1	156.9	155.6	240.11	259.75	274.06
Timmins, Ont.	99.7	108.3	109.1	241.83	253.57	262.66
Toronto, Ont.	154.9	155.9	160.6	228.10	247.52	262.31
Welland, Ont.	107.3	103.5	105.3	256.27	284.67	298.31
Windsor, Ont.	163.0	172.0	175.1	261.70	287.90	305.19
Woodstock, Ont.	140.2	135.9	139.5	211.64	230.31	245.25
Brandon, Man.	148.3	150.5	156.7	172.92	190.25	198.28
Winnipeg, Man.	132.4	130.3	130.2	196.08	213.46	227.37
Moose Jaw, Sask.	98.1	95.8	101.5	175.67	193.37	207.24
Prince Albert, Sask.	148.5	156.1	158.7	208.15	226.03	246.17
Regina, Sask.	158.7	161.7	160.6	213.80	233.23	246.95
Saskatoon, Sask.	163.2	163.2	163.1	199.14	216.05	226.86
Calgary, Alta.	201.5	210.5	226.5	228.96	249.40	266.45
Edmonton, Alta.	196.2	202.1	208.3	219.03	241.09	257.65
Lethbridge, Alta.	169.7	176.3	214.1	194.11	210.12	224.61
Medicine Hat, Alta.	159.7	153.5	169.3	233.61	248.08	254.52
Red Deer, Alta.	278.5	290.0	389.8	192.41	211.55	218.42
Kamloops, BC	313.8	289.8	307.7	234.67	248.71	257.87
Prince George, BC	290.5	289.1	298.0	271.12	289.24	305.89
Vancouver, BC	168.8	169.7	169.3	252.25	275.18	290.65
Victoria, BC	154.5	153.4	154.1	219.52	228.75	240.23

[†]Durable goods manufacturing includes wood products, furniture and fixtures, primary metal industries, metal fabricating industries, machinery (except electrical) transportation equipment, electrical products and non-metallic mineral products, non-durable goods manufacturing includes all other manufacturing industries.

*Kitchener, Cambridge and Waterloo

7.15 Annual average weekly earnings, by industrial division, 1974-78, and monthly averages 1977 and 1978 (dollars)

Year and month	For- estry	Mining (incl. milling)	Manu- factur- ing	Con- struc- tion	Trans- portation, communi- cation and other utilities	Trade	Finance, insurance and real estate	Service ¹	Indus- trial com- posite
Average									
1974	219.64	238.97	185.62	250.30	204.39	139.92	172.25	126.08	178.09
1975	249.58	280.44	213.43	290.95	233.98	159.06	193.12	143.68 ^r	203.34
1976	287.36	317.13	241.19	331.02	262.02	176.59	213.71	160.49	228.03
1977	312.81	348.12	266.04	369.88	291.15	190.96	229.57	171.28	249.95
1978	326.48	376.40	285.67	389.64	313.28	201.79	248.43	180.00	265.37
1977									
January	316.35	339.26	255.65	344.06	281.56	182.28	220.64	166.87	239.52
February	332.13	340.37	259.26	351.04	284.40	184.48	223.65	168.06	242.63
March	325.26	344.07	261.52	358.19	285.79	185.69	228.92	168.15	244.68
April	325.27	341.98	262.64	361.86	288.99	188.96	227.38	168.18	246.43
May	310.91	343.82	262.81	369.14	288.77	190.78	226.79	169.95	248.02
June	304.88	343.67	266.43	377.98	290.96	194.88	229.92	172.31	251.87
July	294.05	341.71	263.90	378.27	291.79	195.05	229.61	175.28	251.62
August	305.36	345.81	265.98	384.63	292.08	194.47	229.90	171.89	252.50
September	324.23	353.52	272.36	388.19	294.10	192.97	233.31	172.14	255.48
October	333.52	358.13	274.57	396.58	297.25	194.01	233.04	173.97	257.53
November	332.55	362.40	275.50	381.89	298.40	192.35	235.36	173.39	256.31
December	249.22	362.65	271.89	346.75	299.76	195.54	236.35	175.22	252.81
1978									
January	328.73	367.90	273.32	361.29	306.64	193.96	239.62	174.85	255.26
February	342.28	373.01	280.19	377.99	306.11	196.37	240.05	174.98	258.85
March	343.90	369.83	280.77	379.66	307.89	198.58	243.74	178.13	260.27
April	336.06	368.14	282.21	383.33	308.07	199.39	245.07	177.10	261.13
May	324.21	365.55	282.55	392.18	309.94	201.98	246.91	177.78	263.38
June	321.93	373.89	285.31	395.00	313.61	205.97	250.59	180.20	267.15
July	304.63	367.55	282.99	395.60	314.16	205.62	249.83	181.61	266.23
August	311.64	369.79	285.47	396.87	313.64	204.11	250.53	181.73	267.07
September	335.76	380.45	292.12	411.79	315.88	203.57	252.18	181.48	271.00
October	340.38	391.72	294.44	409.03	315.66	203.99	251.60	182.81	271.78
November	355.15	397.15	296.84	401.26	323.33	203.35	253.98	184.24	273.30
December	272.44	391.78	291.89	371.72	324.38	204.54	257.03	185.12	269.01

¹Mainly hotels, restaurants, laundries, dry-cleaning establishments and recreational and business services.

7.16 Annual average weekly hours and hourly earnings of wage-earners in specified industries, 1971-78, and monthly averages 1977 and 1978

Year and month	All manufactures		Mining (incl. milling)		Construction	
	Average weekly hours	Average hourly earnings \$	Average weekly hours	Average hourly earnings \$	Average weekly hours	Average hourly earnings \$
Averages						
1971	39.7	3.28	40.4	4.04	39.2	4.75
1972	40.0	3.54	40.3	4.34	40.1	5.15
1973	39.6	3.85	40.9	4.82	39.5	5.66
1974	38.9	4.37	40.4	5.50	39.1	6.43
1975	38.6	5.06	40.0	6.51	39.0	7.53
1976	38.7	5.76	40.3	7.40	38.9	8.68
1977	38.7	6.38	40.6	8.11	38.7	9.77
1978	38.8	6.84	40.5	8.75	39.0	10.28
1977						
January	38.5	6.11	41.0	7.84	37.3	9.43
February	38.9	6.17	40.6	7.90	37.7	9.50
March	38.9	6.21	40.7	7.99	38.4	9.55
April	38.7	6.27	40.2	7.97	38.5	9.62
May	38.3	6.36	40.6	8.02	38.8	9.73
June	38.8	6.39	40.4	8.06	39.7	9.79
July	38.2	6.40	40.2	8.05	39.8	9.75
August	38.7	6.39	40.6	8.05	40.2	9.85
September	39.0	6.52	40.8	8.20	39.9	10.00
October	39.1	6.55	40.9	8.35	40.6	10.05
November	39.0	6.57	41.0	8.43	39.0	10.04
December	37.9	6.60	40.4	8.47	34.9	9.92
1978						
January	37.8	6.62	40.6	8.50	36.3	10.12
February	39.0	6.66	41.1	8.60	38.0	10.23
March	38.6	6.72	40.6	8.56	38.3	10.19
April	38.9	6.72	40.0	8.53	38.6	10.21
May	38.7	6.78	39.9	8.53	40.0	10.10
June	38.9	6.81	41.0	8.65	40.3	10.08
July	38.5	6.81	40.0	8.67	40.5	10.07
August	38.8	6.84	40.0	8.70	40.2	10.18
September	39.2	6.97	40.4	8.82	40.6	10.50
October	39.2	7.01	40.9	9.10	40.2	10.54
November	39.4	7.04	41.5	9.14	38.9	10.65
December	38.3	7.04	40.0	9.23	35.7	10.50

7.17 Average weekly hours and hourly earnings of wage-earners in specified industries and selected urban areas, 1976-78

Industry, province and urban area	Average weekly hours			Average hourly earnings (\$)		
	1976	1977	1978	1976	1977	1978
INDUSTRY						
Mining (incl. milling)	40.3	40.6	40.5	7.40	8.11	8.75
Metal mining	39.6	39.8	39.4	7.48	8.18	8.76
Coal mining	39.5	40.6	40.1	6.94	7.47	8.07
Manufacturing	38.7	38.7	38.8	5.76	6.38	6.84
Durable goods ¹	39.5	39.5	39.6	6.13	6.80	7.30
Non-durable goods ¹	37.9	37.8	37.9	5.36	5.94	6.34
Construction	38.9	38.7	39.0	8.68	9.77	10.28
Building	37.4	37.1	37.3	8.73	9.71	10.35
Engineering	41.6	41.6	42.1	8.60	9.90	10.18
Other						
Urban transit	40.7	40.9	40.9	6.84	7.46	8.03
Highway and bridge maintenance	40.6	41.5	43.2	5.49	5.75	6.02
Hotels, restaurants and taverns	27.1	26.3	25.9	3.51	3.81	3.96
Laundries, cleaners and pressers	33.7	33.6	33.3	3.48	3.80	4.16
PROVINCE						
Manufacturing						
Newfoundland	36.9	36.8	37.4	5.55	6.12	6.33
Nova Scotia	37.9	37.9	38.1	5.07	5.67	6.03
New Brunswick	38.5	38.4	38.5	5.28	5.90	6.24
Quebec	38.9	38.9	39.1	5.16	5.77	6.22
Ontario	39.3	39.3	39.3	5.87	6.47	6.91
Manitoba	37.2	36.8	37.3	5.17	5.69	6.01
Saskatchewan	36.9	37.0	37.4	6.13	6.89	7.30
Alberta	37.5	37.6	37.8	6.25	6.97	7.46
British Columbia	36.5	36.2	36.4	7.55	8.29	8.95
SELECTED URBAN AREA						
Manufacturing						
Montreal	38.4	38.4	38.6	5.14	5.71	6.17
Toronto	39.4	39.3	39.3	5.52	6.02	6.37
Hamilton	38.9	38.8	39.2	6.53	7.13	7.71
Windsor	41.4	40.9	40.7	7.06	7.92	8.47
Winnipeg	37.2	36.9	37.3	5.09	5.58	5.90
Vancouver	36.0	36.0	36.1	7.25	7.98	8.57

¹Durable goods manufacturing includes wood products, furniture and fixtures, primary metal industries, metal fabricating industries, machinery (except electrical), transportation equipment, electrical products and non-metallic mineral products; non-durable goods manufacturing includes all other manufacturing industries.

7.18 Wages and salaries, by industry and supplementary labour income, 1973-78, and by month 1977 and 1978 (million dollars)

Year and month	Industry						
	Agriculture	Forestry	Mining	Manufacturing	Construction	Transportation, communication and other utilities	Trade
Annual							
1973	494	744	1,515	15,528	5,611	6,504	8,524
1974	557	901	1,861	18,125	6,730	7,863	10,193
1975	685	905	2,195	19,933	8,121	8,968	11,986
1976	853	1,084	2,549	22,795	8,521	10,468	13,627
1977	1,011	1,207	2,918	24,967	9,328	11,634	14,575
1978P	1,127	1,338	3,078	27,432	9,006	12,796	15,728
1977							
January	49.1	84.0	230.2	1,943.4	616.5	898.4	1,165.0
February	49.3	87.2	229.0	1,969.0	629.1	911.5	1,163.4
March	55.8	79.2	237.0	2,003.9	661.1	945.4	1,169.5
April	65.8	72.1	231.7	2,017.9	706.4	943.1	1,189.6
May	80.4	92.0	240.1	2,063.8	789.4	959.2	1,209.0
June	97.6	112.3	250.9	2,134.0	850.8	990.3	1,234.3
July	116.2	113.8	255.4	2,111.5	869.2	1,008.7	1,205.5
August	132.4	105.3	253.1	2,138.2	893.6	1,001.8	1,207.9
September	120.6	122.0	244.3	2,156.1	896.9	1,004.9	1,218.7
October	97.1	121.4	248.6	2,163.3	896.2	1,001.2	1,246.9
November	78.9	112.1	249.4	2,151.0	808.0	993.8	1,253.3
December	67.3	104.9	247.9	2,114.9	710.4	976.0	1,311.5
1978							
January	54.8	94.4	252.7	2,099.3	618.2	988.1	1,244.3
February	55.0	97.8	254.6	2,152.9	643.4	1,001.1	1,244.1
March	62.3	92.3	247.4	2,184.6	650.2	999.6	1,265.5
April	73.4	85.5	231.9	2,203.3	702.1	1,016.7	1,278.9
May	89.7	106.7	240.3	2,272.1	774.6	1,055.4	1,297.3
June	108.9	126.3	265.2	2,356.7	830.8	1,121.1	1,335.5
July	129.7	120.2	266.6	2,306.4	826.6	1,112.9	1,306.8
August	147.7	125.6	269.3	2,340.1	818.8	1,099.8	1,307.5
September	134.5	129.7	258.7	2,382.1	860.8	1,108.3	1,323.5
October	108.3	125.8	261.1	2,387.7	848.4	1,090.9	1,348.6
November	88.0	121.3	264.4	2,393.8	772.6	1,110.5	1,370.5
DecemberP	75.1	112.9	265.6	2,353.2	659.1	1,092.0	1,405.9

7.18 Wages and salaries, by industry and supplementary labour income, 1973-78, and by month 1977 and 1978 (million dollars) (concluded)

Year and month	Industry					
	Finance, insurance and real estate	Service	Public administration and defence ¹	Total wages and salaries ²	Supplementary labour income	Total labour income
Annual						
1973	3,747	14,742	5,108	62,595	4,162	66,757
1974	4,513	17,622	6,281	74,717	5,369	80,085
1975	5,336	21,088	7,689	86,971	6,591	93,562
1976	6,188	25,145	9,026	100,340	7,908	108,248
1977	7,076	28,342	10,167	111,326	8,774	120,100
1978P	7,974	31,258	11,223	121,114	9,981	131,095
1977						
January	551.3	2,266.1	767.6	8,573.4	680.6	9,254.0
February	562.4	2,278.9	786.2	8,667.9	687.0	9,354.9
March	578.7	2,303.9	813.2	8,853.9	701.1	9,555.0
April	573.4	2,330.1	814.9	8,950.1	705.6	9,655.7
May	582.9	2,362.3	835.1	9,220.4	725.3	9,945.7
June	598.3	2,426.2	882.5	9,587.7	753.2	10,341.0
July	597.1	2,232.8	901.5	9,427.5	740.8	10,168.3
August	593.8	2,218.3	879.8	9,439.2	741.5	10,180.7
September	603.0	2,453.5	878.8	9,709.6	763.4	10,473.0
October	606.0	2,483.2	856.1	9,730.6	765.3	10,495.9
November	612.3	2,490.3	864.6	9,620.8	758.1	10,378.9
December	616.9	2,496.2	886.9	9,544.8	752.0	10,296.8
1978						
January	629.3	2,502.8	878.7	9,365.2	767.1	10,132.3
February	630.4	2,538.8	874.3	9,496.0	777.8	10,273.8
March	642.2	2,566.9	901.1	9,620.3	787.8	10,408.1
April	645.5	2,581.8	886.4	9,712.9	795.4	10,508.4
May	653.8	2,610.9	923.7	10,035.4	829.8	10,865.1
June	673.6	2,645.4	967.8	10,445.6	863.5	11,309.1
July	675.5	2,491.0	970.7	10,232.3	845.7	11,078.0
August	672.9	2,478.2	959.3	10,245.2	846.7	11,091.9
September	678.4	2,667.0	946.3	10,505.4	868.3	11,373.7
October	676.1	2,730.0	945.1	10,540.3	871.0	11,411.3
November	690.4	2,724.1	979.2	10,524.6	869.7	11,394.3
DecemberP	706.2	2,720.8	990.9	10,390.6	858.5	11,249.1

Table based on the 1960 Standard Industrial Classification. Figure not adjusted for seasonality.

¹Excludes military pay and allowances.

²Includes fishing and trapping.

7.19 Summary of selected working conditions of non-office and office employees in manufacturing and all industries, 1976 and 1977

and all industries: 1976 and 1977					
Item		1976		1977	
		Manu- facturing industries	All Industries ¹	Manu- facturing industries	All industries ¹
Coverage					
NON-OFFICE EMPLOYEES					
Reporting establishments	No.	6,204	15,956	6,050	15,599
Employees	"	771,899	2,198,975	794,811	2,209,763
OFFICE EMPLOYEES					
Reporting establishments	No.	6,165	17,497	6,023	17,055
Employees	"	262,669	1,252,230	270,174	1,320,760
Percentage of non-office employees					
STANDARD WEEKLY HOURS					
35 hours or less		3	3	3	3
Over 35 and under 37½ hours		1	4	2	4
37½ hours		3	10	3	10
Over 37½ and under 40 hours		1	7	1	7
40 hours		81	64	81	64
Over 40 and under 44 hours		5	3	4	3
44 hours and over		5	5	5	5
VACATIONS WITH PAY ²					
Two weeks		—	—	97	83
After: Less than 1 year		—	—	4	11
1 year		—	—	92	72
2 years		—	—	1	6
3 years or more		—	—	—	—

7.19 Summary of selected working conditions of non-office and office employees in manufacturing and all industries, 1976 and 1977 (continued)

Item	1976		1977	
	Manu- facturing industries	All Industries ¹	Manu- facturing industries	All industries ¹
Percentage of non-office employees				
Three weeks	94	90	94	90
After: 1 year or less	3	14	3	15
2 years	1	4	1	4
3 years	11	15	12	17
4 years	4	7	3	7
5 years	48	35	52	34
6-9 years	18	9	15	8
10 years	7	4	7	4
11 years or more	1	—	1	—
Four weeks	84	85	86	86
After: 4 years or less	—	—	1	10
5 years	—	—	1	2
6-9 years	—	—	3	4
10 years	12	18	15	20
11-14 years	19	19	18	17
15 years	36	26	37	26
16-19 years	7	3	5	3
20 years	6	3	5	3
21 years or more	—	—	1	—
Five weeks	59	58	63	61
After: 14 years or less	—	—	1	4
15 years	—	—	4	3
16-19 years	—	—	5	6
20 years	—	—	21	18
21-24 years	—	—	11	11
25 years	21	15	20	15
26-29 years	—	—	—	7
30 years	1	1	1	1
31 years or more	—	—	—	—
Six weeks ^a	23	21	24	22
After: 19 years or less	—	—	1	1
20 years	—	—	1	2
21-24 years	—	—	2	2
25 years	3	3	5	5
26-29 years	—	—	6	6
30 years	9	7	9	7
31 years or more	1	—	1	1
Paid holidays (statutory, public)				
8 days or less	9	9	9	9
9 days	15	11	14	10
10 days	28	32	25	28
11 days	27	32	27	34
12 days	—	—	11	7
13 days or more	—	—	14	11
Percentage of office employees				
STANDARD WEEKLY HOURS				
Under 35 hours	2	3	1	3
35 hours	22	27	22	27
Over 35 and under 37½ hours	9	15	10	15
37½ hours	41	40	39	40
Over 37½ and under 40 hours	4	1	4	1
40 hours	—	—	23	11
Over 40 hours	—	—	1	—
VACATIONS WITH PAY ^a				
Two weeks	—	—	95	70
After: Less than 1 year	—	—	12	8
1 year	—	—	82	62
2 years	—	—	—	—
3 years or more	—	—	—	—
Three weeks	97	98	98	98
After: 1 year or less	6	31	8	34
2 years	2	10	2	10
3 years	13	15	13	20
4 years	3	5	3	4
5 years	52	30	55	25
6-9 years	17	5	12	4
10 years	5	2	4	2
11 years or more	—	—	—	—
Four weeks	91	93	93	95
After: 4 years or less	—	—	2	4
5 years	—	—	1	4
6-9 years	—	—	4	5
10 years	19	24	19	31
11-14 years	16	16	18	27
15 years	38	35	39	21
16-19 years	7	2	5	2
20 years	—	—	4	2
21 years or more	—	—	—	—

7.19 Summary of selected working conditions of non-office and office employees in manufacturing and all industries, 1976 and 1977 (concluded)

Item	1976		1977	
	Manu- facturing industries	All Industries ¹	Manu- facturing industries	All industries ¹
Five weeks ²	67	67	70	75
After: 14 years or less	—	—	1	4
15 years	—	—	4	2
16-19 years	—	—	3	3
20 years	—	—	26	18
21-24 years	—	—	12	11
25 years	24	19	23	24
26-29 years	—	—	1	13
30 years	1	1	1	1
31 years or more	—	—	—	—
Six weeks ²	21	14	23	16
After: 19 years or less	—	—	—	1
20 years	—	—	2	3
21-24 years	—	—	1	—
25 years	3	3	4	4
26-29 years	—	—	3	3
30 years	11	5	11	5
31 years or more	2	1	2	1
Paid holidays (statutory, public)				
8 days or less	6	4	5	4
9 days	14	10	13	10
10 days	29	32	26	30
11 days	31	39	32	40
12 days	9	5	11	5
13 days or more	11	10	13	10

¹Includes all major industries except agriculture, fishing, hunting, trapping, construction, and the non-logging part of forestry.

²Legislation in all jurisdictions in Canada entitle employees to 2 weeks annual vacation with pay, generally after 1 year of employment.

³Includes other provisions.

7.20 Trusteed pension funds, income, expenditures and assets, 1976-78

Item	1976	1977	1978
TRUST ARRANGEMENTS	No.	No.	No.
(a) Corporate trustees	2,705	2,574	2,499
(b) Individual trustees	731	728	712
(c) Combinations of (a) and (b)	82	77	71
(d) Pension fund societies	25	24	20
Total trusteed funds	3,543	3,403	3,302
INCOME	\$'000,000	\$'000,000	\$'000,000
Total contributions	3,392	3,920	4,680
Employer	2,259	2,722	3,271
Employee	1,133	1,198	1,409
Investment income	1,639	2,044	2,571
Realized profit on sale of securities	59	93	282
Miscellaneous	14	48	38
Total income	5,104	6,105	7,571
EXPENDITURES			
Pension payments out of funds	1,037	1,195	1,400
Cost of pension purchased	35	37	44
Cash withdrawals	248	280	380
Administration costs	32	43	48
Realized loss on sale of securities	93	117	63
Other expenditures	9	13	16
Total expenditures	1,454	1,685	1,951
ASSETS (book value)			
Investment in pooled pension funds of trust companies	1,461	1,721	1,883
Investment in mutual funds	27	41	114
Investment in segregated funds of insurance companies	355	467	623
Bonds	11,863	14,307	17,222
Bonds of, or guaranteed by, Government of Canada	620	1,138	1,805
Bonds of, or guaranteed by, provincial governments	6,380	7,664	9,283
Bonds of Canadian municipal governments, school boards, etc.	966	1,152	1,262
Other Canadian bonds	3,887	4,342	4,861
Non-Canadian bonds	10	11	11
Stocks	6,213	6,417	6,726
Canadian, common	5,239	5,442	5,615
Canadian, preferred	79	61	63
Non-Canadian, common	894	911	1,044
Non-Canadian, preferred	1	3	4

7.20 Trusteed pension funds, income, expenditures and assets, 1976-78 (concluded)

Item	1976	1977	1978
ASSETS (book value) (concluded)			
Mortgages	3,349	3,998	4,797
Insured residential (NHA)	1,961	2,191	2,591
Conventional	1,388	1,807	2,206
Real estate and lease-backs	144	200	247
Miscellaneous			
Cash on hand and in chartered banks	398	525	910
Guaranteed investment certificates	172	254	365
Other short-term investments	790	1,209	1,831
Accrued interest and dividends receivable	225	305	393
Accounts receivable	232	289	403
Other assets	5	4	3
Total assets	25,234	29,737	35,517

7.21 Unemployment insurance statistics, 1974-78, and by month 1977 and 1978

Year, month and end of period	Activity					
	Insured population ¹ '000	Claims data ('000)			Benefits data	
		Beneficiaries ^{1,2}	Initial and renewal claims received	Number of weeks '000	Average weekly payment \$	
1974	8,617	..	2,410	28,461	74.89	
1975	8,951	..	2,857	37,327	84.64	
1976	9,249	701	2,678	36,189	92.89	
1977	9,504	752	2,806	38,702	101.00	
1978	9,821	801P	2,809	41,355	109.71	
1977						
January	9,150	893	267	3,948	100.56	
February	9,211	927	200	3,734	101.51	
March	9,244	911	212	4,245	100.83	
April	9,258	870	200	3,512	101.18	
May	9,520	738	201	3,668	99.00	
June	9,691	655	199	2,850	98.86	
July	9,897	625	216	2,498	98.77	
August	9,929	642	199	3,095	99.44	
September	9,560	584	238	2,429	100.75	
October	9,555	634	242	2,641	101.94	
November	9,535	702	318	3,063	103.40	
December	9,502	838	317	3,018	105.84	
1978						
January	9,372	1,011	300	4,712	109.01	
February	9,453	1,029	211	4,182	110.21	
March	9,565	997	207	4,266	110.46	
April	9,597	958	217	3,955	110.33	
May	9,850	856	215	4,135	109.52	
June	10,046	726	191	3,105	107.42	
July	10,254	685	215	2,869	107.01	
August	10,249	689	206	3,171	107.58	
September	9,892	602	217	2,487	108.75	
October	9,855	620	244	2,630	110.22	
November	9,865	660P	310	2,990	111.47	
December	9,849	779P	276	2,853	114.46	
Benefits paid (\$ '000)						
	Regular	Sickness	Maternity	Retirement	Fishing	Training
1974	1,924,543	98,321	81,708	4,164	22,675	2,131,411
1975	2,907,716 ^a	110,990	102,161	5,836	23,622	3,159,280
1976 ^a	3,019,686	129,804	139,625	18,047	28,880	3,361,573
1977	3,485,080	155,829	172,228	13,541	48,399	3,909,044
1978	4,006,869	157,405	195,298	14,832	63,461	4,536,910
1977						
January	356,223	13,820	13,679	1,070	9,416	397,031
February	340,234	13,130	12,402	1,090	8,855	379,067
March	383,752	15,346	14,578	1,210	9,174	428,029
April	318,757	12,588	13,071	1,046	6,768	355,355
May	325,889	13,559	15,198	1,128	4,519	363,169
June	250,356	13,025	14,424	1,130	284	281,723
July	218,932	11,902	13,458	1,093	26	246,704
August	275,640	13,744	15,994	1,296	12	307,785
September	216,668	11,677	13,993	1,097	7	244,760
October	237,355	12,413	15,652	1,239	11	269,262
November	281,264	13,193	16,445	1,215	1,513	316,721
December	280,010	11,231	13,334	929	7,815	319,439

7.21 Unemployment insurance statistics, 1974-78, and by month 1977 and 1978 (concluded)

Year, month and end of period	Activity						Total ^f
	Benefits paid (\$'000)						
	Regular	Sickness	Maternity	Retirement	Fishing	Training	
1978							
January	461,958	14,313	16,286	1,328	13,048	6,742	513,674
February	411,269	13,758	14,136	1,160	10,961	9,607	460,890
March	419,574	14,954	15,222	1,170	10,613	9,634	471,167
April	385,689	13,640	15,159	1,238	9,491	11,192	436,410
May	403,793	14,052	17,352	1,350	7,693	8,653	452,894
June	294,516	13,094	16,729	1,226	331	7,659	333,555
July	273,307	11,964	15,874	1,158	26	4,684	307,015
August	304,800	13,594	18,098	1,340	28	3,240	341,099
September	238,540	11,625	15,255	1,172	28	3,838	270,459
October	248,894	11,870	16,192	1,365	28	11,549	289,898
November	284,490	13,420	20,058	1,326	1,994	12,014	333,303
December	280,038	11,122	14,936	998	9,219	10,233	326,546

¹Annual figures are monthly averages.
²Persons drawing \$1 or more of benefit for a particular week each month.
³Included with regular benefit for 1974 and first six months of 1975.

7.22 Fatal occupational injuries and illnesses¹, by industry, 1976-78

Industry	Number			Percentage of total		
	1976 ^f	1977	1978 ^p	1976 ^f	1977	1978 ^p
Agriculture	18	16	6	1.7	1.7	0.8
Forestry	64	59	71	6.0	6.3	8.9
Fishing and trapping	27	18	14	2.6	1.9	1.8
Mining, quarrying and oil wells	161	128	100	15.2	13.6	12.6
Manufacturing	195	180	142	18.4	19.1	17.9
Construction	189	171	133	17.9	18.1	16.8
Transportation, communication and other utilities	217	176	172	20.5	18.7	21.7
Trade	62	73	51	5.9	7.7	6.4
Finance, insurance and real estate	10	9	4	0.9	1.0	0.5
Service	61	64	41	5.8	6.8	5.2
Public administration	54	49	60	5.1	5.2	7.6
Total	1,058	943	794	100.0	100.0	100.0

¹Data derived from unprocessed fatality claims reported by worker compensation boards. They may differ from fatality claims in Table 7.23, which have been processed for compensation.

7.23 Compensation claims and payments made, for occupational injuries and illnesses, 1977 and 1978

Year and province	Compensation claims				Total injuries and illnesses	Worker compensation payments ³ \$'000
	Medical aid only ¹	Non-fatal disabling injury and illness	Fatal injury and illness ²	Total disabling injury and illness		
1977						
Newfoundland	6,694	6,218	33	6,251	12,945	9,569
Prince Edward Island	1,502	1,517	6	1,523	3,025	1,485
Nova Scotia	17,749	11,713	21	11,734	29,483	23,345
New Brunswick	14,180	9,052	22	9,074	23,254	15,616
Quebec	140,201	137,063	214	137,277	277,478	231,300
Ontario	244,242	150,729	175	150,904	395,146	348,731
Manitoba	16,236	18,244	34	18,278	34,514	21,177
Saskatchewan	19,730	16,203	47	16,250	35,980	25,960
Alberta	61,250	43,463	141	43,604	104,854	65,681
British Columbia	62,528	60,305	138	60,443	122,971	114,437
Total, 1977	584,312	454,507	831	455,338	1,039,650	857,301
1978 ^p						
Newfoundland	6,502	6,131	18	6,149	12,651	8,186
Prince Edward Island	1,543	1,561	5	1,566	3,109	2,015
Nova Scotia	17,973	11,419	19	11,438	29,411	25,486
New Brunswick	14,571	9,632	26	9,658	24,229	17,377
Quebec	140,300	167,656	203	167,859	308,159	253,806
Ontario	235,560	150,199	186	150,385	385,945	402,940
Manitoba	16,166	17,781	34	17,815	33,981	21,459
Saskatchewan	18,757	15,436	47	15,483	34,240	29,847
Alberta	64,908	44,368	138	44,506	109,414	73,087
British Columbia	64,112	66,081	152	66,233	130,345	132,452
Total, 1978 ^p	580,392	490,264	828	491,092	1,071,484	966,655

¹Injuries requiring medical treatment but not causing disability for a sufficient period to qualify for compensation; the period varies among provinces.
²See footnote Table 7.22.
³Includes only, except where noted otherwise, payments to compensate loss of earnings, medical aid payments, cost of rehabilitation and hospitalization (not including capital expenditures) and pension paid (not pensions awarded) for temporary and permanent disabilities.

7.24 Union membership in Canada, 1969-78

Year	Members '000	Union membership as percentage of civilian labour force	Union membership as percentage of non-agricultural paid workers
1969	2,075	26.3	32.5
1970	2,173	27.2	33.6
1971	2,231	26.8	33.6
1972	2,388	27.8	34.6
1973	2,591	29.2	36.1
1974	2,732	29.4	35.8
1975	2,884	29.8	36.9
1976	3,042	30.6	37.3
1977	3,149	31.0	38.2
1978	3,278	31.3	39.0

7.25 Union membership, by type of union and affiliation, as at January 1977 and 1978

Year, type and affiliation	Unions No.	Membership No.	%
1977			
International unions	89	1,544,717	49.0
AFL-CIO/CLC	71	1,278,834	40.6
CLC only	5	166,359	5.3
AFL-CIO only	6	3,857	0.1
Unaffiliated unions	7	95,667	3.0
National unions	103	1,492,093	47.4
CLC	25	702,046	22.3
CNTU	9	172,201	5.5
CSD	3	25,593	0.8
CCU	9	20,822	0.7
Unaffiliated unions	57	571,431	18.1
Directly chartered local unions	259	30,883	1.0
CLC	113	16,300	0.5
CNTU	3	513	0.0
CSD	143	14,070	0.5
Independent local organizations	141	81,520	2.6
Total	592	3,149,213	100.0
1978			
International unions	88	1,553,477	47.4
AFL-CIO/CLC	69	1,281,495	39.1
CLC only	5	165,131	5.0
AFL-CIO only	7	10,573	0.3
Unaffiliated unions	7	96,278	3.0
National unions	121	1,637,626	50.0
CLC	23	743,886	22.7
CNTU	9	177,239	5.4
CSD	3	25,406	0.8
CCU	13	26,007	0.8
Unaffiliated unions	73	665,088	20.3
Directly chartered local unions	251	26,493	0.8
CLC	111	13,300	0.5
CNTU	4	516	0.0
CSD	136	12,677	0.4
Independent local organizations	170	60,372	1.8
Total	630	3,277,968	100.0

¹Less than 0.1%.

7.26 Average annual compound percentage increases in base rates, in major collective agreement settlements, 1977 and 1978

Year and quarter	Manufacturing	Non-manufacturing ¹	All industries ¹
1977			
1st quarter	7.1	8.6	8.4
2nd "	6.4	8.4	8.0
3rd "	7.2	7.5	7.4
4th "	7.3	7.0	7.1
Annual	7.0	7.9	7.8
1978			
1st quarter	6.5	6.6	6.6
2nd "	6.4	6.5	6.5
3rd "	6.4	7.1	6.9
4th "	7.5	7.8	7.7
Annual	6.6	7.0	6.9

¹Excluding construction.

7.27 Strikes and lockouts, by industry and jurisdiction, 1977 and 1978 with totals for 1974-78

Year, industry and jurisdiction	Strikes and lockouts beginning during year	Strikes and lockouts in existence during year		
		Strikes and lockouts	Workers involved	Duration in man-days
1977				
INDUSTRY				
Agriculture	—	—	—	—
Forestry	6	6	949	22,170
Fishing and trapping	4	4	1,379	14,960
Mining	24	28	11,217	91,050
Manufacturing	306	342	95,521	1,665,460
Construction	81	84	33,215	404,990
Transportation and utilities	93	98	32,650	527,100
Trade	62	70	4,851	128,470
Finance	6	7	544	10,720
Service	90	96	22,532	328,150
Public administration	67	68	14,699	114,810
JURISDICTION				
Newfoundland	39	39	11,040	96,660
Prince Edward Island	—	—	—	—
Nova Scotia	21	22	2,107	22,930
New Brunswick	30	30	5,866	37,720
Quebec	234	263	54,424	1,274,980
Ontario	221	245	84,208	1,111,270
Manitoba	12	14	2,374	19,450
Saskatchewan	55	56	6,821	32,200
Alberta	10	13	4,819	66,810
British Columbia	56	58	21,539	144,730
Federal public service	34	34	6,376	16,590
Federal industries	27	29	17,983	484,540
Total	1977	739	217,557	3,307,880
1978				
INDUSTRY				
Agriculture	1	1	4	20
Forestry	19	19	5,446	67,810
Fishing and trapping	1	1	600	1,200
Mining	38	39	31,147	1,699,460
Manufacturing	438	459	117,548	2,527,980
Construction	104	108	63,105	1,232,610
Transportation and utilities	115	126	74,332	945,480
Trade	85	91	10,618	245,950
Finance	16	16	924	7,520
Service	132	143	33,824	407,650
Public administration	55	55	64,140	257,140
JURISDICTION				
Newfoundland	36	36	15,186	328,920
Prince Edward Island	2	2	788	13,770
Nova Scotia	27	27	2,815	65,390
New Brunswick	54	54	16,317	111,580
Quebec	327	354	115,659	1,785,730
Ontario	268	276	121,771	2,970,560
Manitoba	34	34	6,541	292,640
Saskatchewan	46	50	9,617	163,830
Alberta	48	51	21,685	447,340
British Columbia	100	103	35,919	446,360
Yukon and Northwest Territories	1	1	14	440
Federal public service	21	23	27,360	164,760
Federal industries	40	47	28,016	601,500
Total	1978	1,004	401,688	7,392,820
	1977	739	217,557	3,307,880
	1976	921	1,570,940	11,609,890
	1975	1,403	506,443	10,908,810
	1974	1,170	592,220	9,255,120

7.28 Estimated composition of total employee compensation, in Canada, 1976

Item	All industry Average expenditure per employee \$	Percentage of total compensation	Percentage of gross payroll	Composition of total compensation ¹ \$
Direct payments to employees				
Pay for time worked				
Basic pay for regular work	10,855	75.5	82.1	100.00
Commissions, incentive bonus	252	1.7	1.9	2.33
Overtime (straight-time pay)	271	1.9	2.1	2.50
Premium pay				
Overtime, including holiday work	139	1.0	1.1	1.28
Shift work	40	0.3	0.3	0.37
Other	38	0.3	0.3	0.35
Total, pay for hours worked	11,595	80.6	87.7	106.82
Paid absence				
Paid holidays	489	3.4	3.7	4.50
Vacation pay	715	5.0	5.4	6.59
Sick leave pay	142	1.0	1.1	1.31
Personal or other pay	23	0.2	0.2	0.21
Total, paid absence	1,369	9.5	10.4	12.61
Miscellaneous direct payments				
Bonuses—Christmas, year- end, etc.	57	0.4	0.4	0.53
Severance pay	23	0.2	0.2	0.21
Taxable benefits				
Provincial medicare	71	0.5	0.5	0.65
Other benefits	56	0.4	0.4	0.52
Other payments	50	0.4	0.4	0.46
Total, miscellaneous direct payments	257	1.8	1.9	2.37
Total (gross payroll)	13,221	91.9	100.0	121.80
Employer contributions to employee				
Welfare and benefit plans				
Worker compensation	157	1.1	1.2	1.45
Unemployment insurance	175	1.2	1.3	1.61
Canada or Quebec pension plan	130	0.9	1.0	1.20
Private pension plans	489	3.4	3.7	4.50
Quebec Health Insurance Board	38	0.3	0.3	0.35
Private life and health plans	149	1.0	1.1	1.37
Supplementary unemployment benefit	4	—	—	0.04
Other plans or funds	20	0.1	0.2	0.18
Total, employer contributions	1,162	8.0	8.8	10.70
Total, compensation	14,383	100.0	108.8	132.50

¹Basic pay for regular work \$100.00.

7.29 Average wage and salary rates for selected occupations for certain metropolitan areas and cities, and for Canada, Oct. 1, 1977 and 1978*

Occupation	Halifax-Dartmouth, NS		Saint John, NB		Montreal, Que.		Ottawa-Hull, Ont., Que.		Toronto, Ont.	
	1977	1978	1977	1978	1977	1978	1977	1978	1977	1978
MAINTENANCE TRADES										
Carpenter	6.62	7.02	6.54	6.93	6.67	7.22	6.80	7.52	7.03	7.40
Electrical repairman	7.33	7.72	7.67	8.62	7.33	7.90	8.00	8.56	7.88	8.19
Machinist	7.17	7.96	7.37	7.70	7.25	7.73	7.33	8.34	7.37	7.78
Millwright	6.99	7.35	8.78	9.22	7.23	7.97	8.14	8.66	7.55	8.38
Pipefitter	7.88	8.58	8.60	8.71	7.53	8.00	8.21	8.76	7.74	8.24
Tool and die maker	—	—	—	—	7.11	7.49	7.11	—	7.73	8.44
Welder	7.02	7.67	8.29	8.85	7.09	7.74	7.55	8.50	7.12	7.32
SERVICE OCCUPATIONS										
Truck driver, light and heavy	5.35	5.98	5.63	6.04	6.10	6.71	6.27	6.72	6.32	6.75
Industrial truck operator	7.04	—	6.31	6.63	6.16	6.72	6.52	7.20	6.22	6.69
Labourer, non-production	4.97	5.63	5.37	5.83	5.39	5.86	5.40	5.87	5.75	5.83
	\$ a wk	\$ a wk	\$ a wk	\$ a wk	\$ a wk	\$ a wk	\$ a wk	\$ a wk	\$ a wk	\$ a wk
OFFICE OCCUPATIONS, Male employees										
Bookkeeper, senior	264	274	266	285	274	314	267	290	274	291
Clerk, general office, intermediate	174	208	215	235	209	225	194	208	204	220
Clerk, general office, senior	241	256	266	300	260	274	235	250	257	271
Clerk, order	212	227	210	229	229	249	234	242	234	248
Draftsman, intermediate	244	280	260	280	250	280	272	283	290	299
Draftsman, senior	303	329	316	335	323	347	311	336	339	359
OFFICE OCCUPATIONS, Female employees										
Bookkeeping, billing and calculating machine operator, senior	166	186	168	180	182	197	202	214	186	202
Clerk, general office, intermediate	162	187	175	189	186	200	192	205	188	198
Secretary, senior	197	223	209	232	219	243	220	245	222	238
Stenographer, junior	153	161	158	174	170	186	165	182	179	194
Stenographer, senior	173	181	177	200	196	212	189	207	197	211
Telephone operator	148	160	161	173	169	185	166	195	168	180
Typist, junior	135	149	148	168	150	166	139	164	156	166
Typist, senior	155	168	164	175	172	187	163	174	175	185

7.29 Average wage and salary rates for selected occupations for certain metropolitan areas and cities, and for Canada, 1977 and 1978: (concluded)

Occupation	Winnipeg, Man.		Regina, Sask.		Edmonton, Alta.		Vancouver, BC		Canada	
	1977	1978	1977	1978	1977	1978	1977	1978	1977	1978
MAINTENANCE TRADES										
Carpenter	\$ an hr 7.08	\$ an hr 7.17	\$ an hr 7.48	\$ an hr 8.16	\$ an hr 7.95	\$ an hr 8.41	\$ an hr 9.37	\$ an hr 9.71	\$ an hr 7.32	\$ an hr 7.63
Electrical repairman	7.47	7.84	8.36	9.18	8.34	9.16	9.39	9.95	8.00	8.51
Machinist	7.30	7.64	8.07	8.99	7.91	8.96	9.01	9.94	7.54	8.07
Milling	7.31	7.97	7.90	9.32	8.21	9.06	9.26	9.85	7.93	8.52
Pipefitter	7.44	7.75	8.60	9.31	8.48	8.76	9.32	9.98	8.05	8.61
Tool and die maker	7.25	7.60	—	—	7.57	9.23	9.24	9.99	7.77	8.28
Welder	7.14	7.57	7.93	8.51	8.09	8.67	9.30	9.69	7.78	8.26
SERVICE OCCUPATIONS										
Truck driver, light and heavy	6.11	6.38	5.86	6.57	6.37	6.79	7.67	8.15	6.28	6.74
Industrial truck operator	5.80	6.13	6.29	6.63	6.13	7.25	8.13	8.96	7.12	7.12
Labourer, non-production	5.27	5.52	5.42	5.71	6.02	6.46	7.01	7.37	5.90	6.19
	\$ a wk	\$ a wk	\$ a wk	\$ a wk	\$ a wk	\$ a wk	\$ a wk	\$ a wk	\$ a wk	\$ a wk
OFFICE OCCUPATIONS, Male employees										
Bookkeeper, senior	275	283	278	300	304	327	304	345	275	300
Clerk, general office, intermediate	208	223	195	218	213	242	228	243	226	226
Clerk, general office, senior	257	259	257	257	258	292	283	303	260	275
Clerk, order	219	232	234	236	223	251	262	285	236	255
Draughtsman, intermediate	290	302	225	286	292	312	312	336	271	294
Draughtsman, senior	339	351	335	—	336	369	358	386	328	351
OFFICE OCCUPATIONS, Female employees										
Bookkeeping, billing and calculating machine operator, senior	180	191	188	197	198	226	207	229	186	200
Clerk, general office, senior	182	195	179	197	194	202	201	215	189	200
Secretary, senior	206	224	226	245	227	246	241	258	221	238
Stenographer, junior	167	179	168	188	175	182	188	203	171	190
Stenographer, senior	192	200	195	218	209	233	216	233	198	214
Telephone operator	162	172	168	200	167	176	187	206	170	194
Typist, junior	158	168	159	178	178	188	176	188	161	174
Typist, senior	177	186	187	201	198	207	197	207	181	196

*The rates cover all major industries except agriculture, fishing, hunting, trapping, construction, and the non-logging part of forestry.

7.30 Average income of families in current and constant dollars by region, selected years, 1961-78

Region	1961	1967	1971	1973	1975	1977	1978P
<i>Current dollars</i>							
Atlantic provinces	4,156	5,767	7,936	9,965	13,474	16,590	17,064
Quebec	5,294	7,404	9,919	12,024	15,446	19,056	20,261
Ontario	5,773	8,438	11,483	13,912	18,047	21,600	22,628
Prairie provinces	4,836	6,908	9,309	11,760	16,177	19,712	21,242
British Columbia	5,491	7,829	11,212	13,942	17,746	21,040	23,327
Canada	5,317	7,602	10,368	12,716	16,613	20,101	21,346
<i>Constant (1971) dollars</i>							
Atlantic provinces	5,544	6,667	7,936	8,839	9,728	10,319	9,744
Quebec	7,062	8,559	9,919	10,665	11,152	11,853	11,569
Ontario	7,701	9,754	11,483	12,340	13,030	13,435	12,921
Prairie provinces	6,451	7,986	9,309	10,431	11,680	12,261	12,129
British Columbia	7,325	9,050	11,212	12,367	12,813	13,087	13,320
Canada	7,093	8,788	10,368	11,279	11,994	12,503	12,189

7.31 Percentage distribution of families in constant (1971) dollars, showing average and median incomes, selected years, 1967-77

Income group in constant (1971) dollars	1967	1969	1971	1973	1975	1977
Under \$3,000	9.9	9.6	9.0	6.5	5.5	5.8
\$ 3,000 - \$ 4,999	13.5	13.0	11.5	10.3	10.1	9.4
5,000 - 6,999	17.6	14.6	12.2	10.8	9.5	8.7
7,000 - 9,999	26.9	25.2	22.0	20.8	18.8	16.6
10,000 - 11,999	12.0	13.0	14.0	13.4	13.2	12.6
12,000 - 14,999	10.2	11.5	14.2	15.5	16.3	16.1
15,000 - 19,999	6.4	8.1	10.9	14.0	15.8	17.4
20,000 and over	3.5	4.9	6.2	8.6	10.7	13.6
Total	100.0	100.0	100.0	100.0	100.0	100.0
Average income	\$ 8,788	9,490	10,368	11,279	11,994	12,503
Median income	\$ 7,906	8,465	9,347	10,217	10,881	11,540

Median income refers to the middle or central value when incomes are ranged in order of magnitude. Median income is lower than average income in these tables since it is not as affected by a few abnormally large values in the distribution.

7.32 Percentage distribution of families by income group, by region, 1977 and 1978

Year and income group	Atlantic provinces	Quebec	Ontario	Prairie provinces	British Columbia	Canada
1977						
Under \$3,000	2.4	1.8	1.9	3.2	3.1	2.3
\$ 3,000 - \$ 4,999	4.4	4.0	3.5	4.1	3.9	3.9
5,000 - 6,999	9.4	7.0	4.2	6.0	4.9	5.8
7,000 - 8,999	8.3	6.0	4.7	6.0	5.0	5.6
9,000 - 10,999	8.7	5.8	4.5	6.0	3.9	5.4
11,000 - 11,999	4.6	3.3	2.3	2.8	2.4	2.9
12,000 - 12,999	4.1	3.6	2.8	3.3	2.2	3.2
13,000 - 13,999	4.3	4.4	3.3	3.3	3.3	3.7
14,000 - 14,999	4.3	3.8	3.5	3.4	2.7	3.5
15,000 - 15,999	3.9	4.0	3.8	3.5	3.0	3.7
16,000 - 16,999	4.2	4.4	4.1	3.5	3.8	4.0
17,000 - 17,999	3.8	3.9	4.0	3.6	4.3	3.9
18,000 - 19,999	6.5	7.8	8.1	7.4	6.4	7.6
20,000 - 21,999	6.2	7.4	7.6	6.5	7.7	7.3
22,000 - 24,999	7.7	8.5	9.0	8.5	10.2	8.8
25,000 - 29,999	8.1	10.6	12.6	11.9	13.6	11.7
30,000 - 34,999	4.3	5.5	8.1	7.2	8.9	7.0
35,000 and over	4.6	8.3	12.1	9.7	10.8	9.8
Total	100.0	100.0	100.0	100.0	100.0	100.0
Average income	\$ 16,590	19,056	21,600	19,712	21,040	20,101
Median income	\$ 14,865	17,500	19,847	18,323	20,318	18,565
Sample size	No. 6,711	4,404	5,449	8,493	2,918	27,975

7.32 Percentage distribution of families by income group, by region, 1977 and 1978 (concluded)

Year and income group	Atlantic provinces	Quebec	Ontario	Prairie provinces	British Columbia	Canada
1978P						
Under \$3,000	2.3	1.5	1.3	2.6	1.8	1.7
\$ 3,000 - \$ 4,999	4.3	3.6	3.2	3.3	1.8	3.3
5,000 - 6,999	10.3	6.8	5.0	4.9	2.8	5.7
7,000 - 8,999	9.4	5.7	4.2	6.9	7.1	5.8
9,000 - 10,999	7.2	5.6	4.5	6.0	4.0	5.2
11,000 - 11,999	4.6	2.8	2.6	2.3	2.0	2.7
12,000 - 12,999	3.8	3.5	2.0	2.7	2.9	2.8
13,000 - 13,999	2.9	2.9	3.4	3.1	2.5	3.1
14,000 - 14,999	3.8	3.8	3.5	3.0	3.3	3.5
15,000 - 15,999	4.6	3.8	3.2	3.0	3.6	3.5
16,000 - 16,999	3.4	3.6	2.8	3.4	2.3	3.1
17,000 - 17,999	4.0	4.3	3.1	3.7	3.7	3.7
18,000 - 19,999	6.2	7.1	7.0	6.7	7.2	6.9
20,000 - 21,999	5.9	7.7	7.7	6.2	7.3	7.2
22,000 - 24,999	7.5	8.8	11.3	10.5	9.5	10.0
25,000 - 29,999	8.4	11.5	13.1	11.9	11.0	11.8
30,000 - 34,999	5.0	7.8	8.8	7.9	11.6	8.4
35,000 and over	6.4	9.2	13.3	12.1	15.5	11.6
Total	100.0	100.0	100.0	100.0	100.0	100.0
Average income	\$ 17,064	20,261	22,628	21,242	23,327	21,346
Median income	\$ 15,304	18,592	21,105	19,567	21,345	19,717
Sample size	No. 1,330	1,785	2,014	1,514	726	7,369

7.33 Percentage distribution of families by income group, age and sex of head, 1977

Income group	Age group						
	Under 25	25-34	35-44	45-54	55-64	65-69	70 and over
							Average %
Families with male heads							
Under \$3,000	2.7	1.3	1.2	0.8	2.3	3.8	1.6
\$ 3,000 - \$ 4,999	2.4	1.5	0.8	1.5	3.2	8.7	2.8
5,000 - 6,999	5.2	2.2	1.9	1.9	5.0	15.0	4.9
7,000 - 8,999	6.3	3.7	3.0	2.5	5.1	13.7	5.1
9,000 - 10,999	8.4	4.4	3.4	3.3	5.9	9.5	5.0
11,000 - 11,999	4.0	3.2	2.3	1.9	2.8	4.4	2.8
12,000 - 12,999	5.1	3.2	2.6	2.3	3.2	4.2	3.1
13,000 - 13,999	4.9	4.6	2.7	2.7	3.9	5.0	3.6
14,000 - 14,999	5.6	4.5	3.3	2.5	3.5	3.2	3.6
15,000 - 15,999	5.5	4.4	4.1	3.1	3.3	3.0	3.8
16,000 - 16,999	5.0	5.3	4.2	3.9	3.8	2.5	1.9
17,000 - 17,999	6.1	4.9	4.6	3.7	3.1	1.9	1.7
18,000 - 19,999	9.0	9.7	8.5	7.1	7.6	5.4	4.2
20,000 - 21,999	8.4	10.1	8.4	7.0	7.2	3.5	2.9
22,000 - 24,999	9.6	11.7	10.7	9.2	7.5	3.3	1.7
25,000 - 29,999	6.7	13.2	16.3	15.8	11.3	4.6	2.7
30,000 - 34,999	2.6	6.5	9.2	11.3	7.8	2.4	1.4
35,000 and over	2.8	5.5	12.9	19.3	13.2	5.8	2.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Average income	\$ 16,593	20,182	23,465	25,563	21,180	13,836	10,870
Median income	\$ 16,014	19,410	21,791	23,812	19,228	10,856	8,015
Sample size	No. 1,470	6,344	5,229	4,988	3,969	1,497	1,988
Families with female heads							
Under \$3,000	21.0	13.9	6.0	5.7	5.8	3.2	1.8
\$ 3,000 - \$ 4,999	25.2	18.0	11.1	12.1	9.7	12.7	14.1
5,000 - 6,999	16.9	19.4	17.2	9.5	6.4	14.0	13.5
7,000 - 8,999	10.9	10.4	10.8	10.2	8.0	7.2	10.1
9,000 - 10,999	3.9	9.6	8.8	8.4	9.9	9.7	12.3
11,000 - 11,999	3.0	6.1	3.4	3.4	3.9	3.7	2.1
12,000 - 12,999	1.5	2.4	6.0	4.3	3.9	1.4	4.0
13,000 - 13,999	1.5	3.0	2.8	3.5	6.9	6.5	6.2
14,000 - 14,999	2.5	3.0	3.0	4.6	3.4	5.1	2.1
15,000 - 15,999	2.6	2.2	1.3	5.3	4.3	2.1	3.8
16,000 - 16,999	1.4	2.5	2.6	2.2	4.2	1.8	4.4
17,000 - 17,999	0.8	1.8	4.8	2.6	2.3	4.6	0.9
18,000 - 19,999	2.4	1.9	4.6	6.0	4.0	8.1	6.3
20,000 - 21,999	2.5	0.8	4.4	3.9	4.3	3.1	1.0
22,000 - 24,999	2.9	2.9	5.0	5.5	7.3	2.4	5.4
25,000 - 29,999	0.5	0.7	2.7	5.1	5.4	2.8	7.0
30,000 - 34,999	—	0.2	3.8	2.4	5.3	2.5	2.9
35,000 and over	0.2	0.2	1.7	5.3	4.9	9.2	2.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Average income	\$ 7,319	8,448	12,349	14,274	15,272	15,172	13,534
Median income	\$ 5,421	6,861	10,117	12,153	13,341	11,873	10,706
Sample size	No. 204	510	467	502	366	3,174	281

7.33 Percentage distribution of families by income group, age and sex of head, 1977 (concluded)

Income group	Age group							Average %
	Under 25	25-34	35-44	45-54	55-64	65-69	70 and over	
All families								
Under \$3,000	5.0	2.4	1.6	1.3	2.6	3.8	2.6	2.3
\$ 3,000 - \$ 4,999	5.2	2.9	1.8	2.6	3.8	9.1	12.8	3.9
5,000 - 6,999	6.6	3.7	3.3	2.7	5.1	14.9	23.8	5.8
7,000 - 8,999	6.8	4.2	3.7	3.3	5.3	13.0	17.3	5.6
9,000 - 10,999	7.8	4.8	3.9	3.8	6.3	9.5	10.0	5.4
11,000 - 11,999	3.9	3.4	2.4	2.0	2.8	4.4	3.0	2.9
12,000 - 12,999	4.6	3.1	3.0	2.5	3.3	3.9	3.8	3.2
13,000 - 13,999	4.5	4.6	2.7	2.8	4.2	5.2	3.0	3.7
14,000 - 14,999	5.2	4.3	3.2	3.7	3.5	3.4	2.5	3.5
15,000 - 15,999	5.2	4.2	3.8	3.3	3.4	2.9	2.6	3.7
16,000 - 16,999	4.5	5.0	4.0	3.8	3.9	2.4	2.2	4.0
17,000 - 17,999	5.5	4.7	4.6	3.6	3.0	2.2	1.6	3.9
18,000 - 19,999	8.2	9.1	8.2	7.0	7.3	5.7	3.4	7.6
20,000 - 21,999	7.7	9.3	8.1	6.7	7.0	3.5	1.6	7.3
22,000 - 24,999	8.8	11.0	10.2	8.8	7.4	3.3	3.1	8.8
25,000 - 29,999	5.9	12.2	15.0	14.7	10.8	4.4	3.0	11.7
30,000 - 34,999	2.2	6.0	8.7	10.5	7.6	2.4	1.6	7.0
35,000 and over	2.5	5.0	11.8	17.9	12.5	6.1	2.1	9.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Average income	\$	15,455	19,178	22,412	24,478	20,686	13,973	11,217
Median income	\$	15,077	18,569	20,936	22,667	18,744	10,941	8,248
Sample size	No.	1,674	6,854	5,696	5,490	4,335	1,657	2,269
								27,975

7.34 Percentage distribution of families by income group and education of head¹, 1977

Income group		Elementary schooling 0-8 years	Some high school and no post-secondary ²	Post-secondary (non-university)		University degree
				Some	Completed	
Under \$3,000		3.1	2.1	2.0	1.6	1.2
\$ 3,000 - \$ 4,999		6.5	3.3	3.0	1.6	1.3
5,000 - 6,999		10.5	4.6	4.2	3.2	1.5
7,000 - 8,999		9.0	4.7	4.5	4.1	2.4
9,000 - 10,999		7.2	5.8	5.1	3.1	1.7
11,000 - 11,999		3.5	3.2	5.7	2.0	1.1
12,000 - 12,999		3.7	3.3	3.2	2.9	1.3
13,000 - 13,999		4.1	4.0	3.8	3.3	2.0
14,000 - 14,999		3.6	3.8	3.7	3.5	2.2
15,000 - 15,999		3.8	4.2	3.9	2.6	2.2
16,000 - 16,999		4.2	4.2	4.2	4.5	2.4
17,000 - 17,999		3.0	4.2	4.6	5.4	2.3
18,000 - 19,999		6.7	8.5	8.4	8.0	4.9
20,000 - 21,999		6.1	7.5	7.9	8.6	7.2
22,000 - 24,999		6.6	9.0	9.8	11.7	9.1
25,000 - 29,999		7.3	12.0	12.9	16.4	17.0
30,000 - 34,999		4.5	6.9	7.1	8.7	13.5
35,000 and over		6.5	8.6	8.7	8.8	26.7
Total		100.0	100.0	100.0	100.0	100.0
Average income	\$	16,517	19,954	20,386	21,720	28,961
Median income	\$	14,645	18,591	19,157	20,988	27,126
Sample size	No.	9,398	11,691	16,186	2,542	2,391

¹Data by education are not comparable with previously published figures due to category revisions.²Includes high school graduation.

7.35 Percentage distribution of families¹ by income group, family characteristics and combination of income recipients, 1977

Income group	Income recipient ²				
	Husband-wife families			All other families	
	Head only	Head and spouse only	Head and other family members ³	Head only	Head and other family members ³
Under \$3,000	3.9	0.7	0.4	13.7	1.6
\$ 3,000 - \$ 4,999	4.3	3.0	0.5	19.1	7.0
5,000 - 6,999	6.0	6.1	1.2	18.8	8.0
7,000 - 8,999	5.9	6.1	2.3	11.1	7.7
9,000 - 10,999	7.5	4.9	2.7	8.3	8.9
11,000 - 11,999	4.0	2.6	3.1	3.8	3.8
12,000 - 12,999	4.3	3.0	1.8	4.1	4.0
13,000 - 13,999	5.4	3.4	2.4	2.7	5.2
14,000 - 14,999	5.4	3.4	2.1	3.1	3.7
15,000 - 15,999	5.7	3.4	2.5	1.9	4.9
16,000 - 16,999	6.4	3.6	3.0	2.3	4.0
17,000 - 17,999	4.8	4.1	3.1	1.9	4.0
18,000 - 19,999	9.1	8.2	6.5	2.4	6.8
20,000 - 21,999	7.7	8.3	6.9	2.0	5.1
22,000 - 24,999	6.9	10.1	10.1	1.8	7.7
25,000 - 29,999	6.3	14.1	16.4	1.0	7.3
30,000 - 34,999	2.8	7.2	12.9	1.3	4.0
35,000 and over	3.4	7.7	23.5	0.7	6.3
Total	100.0	100.0	100.0	100.0	100.0
Average income	\$ 16,251	20,221	27,450	8,851	16,785
Median income	\$ 15,565	19,353	25,861	6,829	15,014
Sample size	No. 6,274	11,789	6,500	1,194	2,026

¹Excludes 12,000 families who received no cash income in 1977 (see footnote 2 to Table 7.36).

²Data not shown for income recipient group "Other than head only" due to the small number of cases in the sample.

³"Other family members" refers to any income of children or other relatives and may also include income of wife.

7.36 Percentage distribution of families by major source of income within income quintiles, selected years, 1961-77

Major source of income within quintiles ¹	1961	1965	1967	1971	1973	1975	1977
Lowest quintile							
No income ²	2.4	0.8	1.6	1.6	1.1	1.3	1.0
Wages and salaries	46.3	39.9	36.3	33.6	35.5	31.5	30.6
Net income from self-employment	9.1	18.1	19.2	11.8	10.6	8.2	8.1
Transfer payments	34.6	34.6	35.9	46.2	45.5	51.5	52.7
Investment income	3.4	3.4	3.0	3.3	3.2	3.9	3.5
Miscellaneous income	4.2	3.2	4.1	3.4	4.0	3.6	4.1
Second-lowest quintile							
Wages and salaries	83.5	80.0	80.8	81.0	80.8	79.8	79.8
Net income from self-employment	11.6	13.0	10.0	7.6	7.9	6.3	6.8
Transfer payments	1.8	4.1	4.1	4.9	5.5	7.0	7.1
Investment income	1.0	1.3	2.1	2.6	2.8	3.0	2.9
Miscellaneous income	2.0	1.7	3.0	3.9	3.0	3.9	3.5
Middle quintile							
Wages and salaries	91.3	88.9	92.0	93.1	91.3	92.5	92.2
Net income from self-employment	7.0	8.9	6.0	3.9	5.2	3.8	4.3
Transfer payments	0.3	0.4	0.7	0.3	1.1	1.2	1.0
Investment income	1.0	0.9	0.7	1.3	1.1	1.3	0.8
Miscellaneous income	0.5	0.8	0.7	1.4	1.3	1.2	1.6
Second-highest quintile							
Wages and salaries	92.1	90.8	93.8	94.7	93.9	94.4	94.5
Net income from self-employment	6.2	7.5	4.5	2.8	3.9	3.8	3.2
Transfer payments	0.1	0.3	0.3	0.2	0.3	0.4	0.4
Investment income	1.2	0.7	0.8	1.4	1.3	0.9	1.3
Miscellaneous income	0.5	0.7	0.6	0.9	0.7	0.5	0.6

7.36 Percentage distribution of families by major source of income within income quintiles, selected years, 1961-77 (concluded)

Major source of income within quintiles ¹	1961	1965	1967	1971	1973	1975	1977
Highest quintile							
Wages and salaries	86.8	86.7	89.1	91.2	90.0	91.0	91.0
Net income from self-employment	10.9	11.1	8.9	5.6	7.8	7.1	6.7
Transfer payments	—	—	—	0.1	—	—	0.1
Investment income	1.7	1.7	1.8	2.1	1.8	1.4	1.7
Miscellaneous income	0.6	0.6	0.2	0.9	0.3	0.4	0.6
All families							
No income*	0.5	1.1	0.3	0.3	0.2	0.3	0.2
Wages and salaries	80.0	73.6	78.4	78.7	78.3	77.9	77.6
Net income from self-employment	9.0	10.4	9.7	6.3	7.1	5.8	5.8
Transfer payments	7.3	10.7	8.2	10.3	10.5	12.0	12.2
Investment income	1.7	2.4	1.7	2.2	2.0	2.1	2.0
Miscellaneous income	1.6	1.8	1.7	2.1	1.9	2.0	2.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

¹Families are arranged in ascending order of size of total income and then divided into five equal groups, or quintiles.

*These are families who either immigrated in the survey year so that they had no income from Canadian sources in the previous year or are new families who had no income of their own in the previous year.

7.37 Patterns of expenditure for families of two or more persons based on surveys of eight Canadian cities, 1969-76

Item	1969	1972	1974	1976
Family characteristics				
Average family size	No. 3.63	3.48	3.42	3.32
Children under 5	" 0.34	0.30	0.28	0.25
Children 5-15	" 0.91	0.79	0.75	0.71
Adults 16-17	" 0.14	0.14	0.15	0.14
Adults 18-64	" 2.09	2.10	2.11	2.09
Adults 65 and over	" 0.21	0.21	0.18	0.21
Full-time earners	" 1.01	1.00	1.04	1.03
Age of head	yr 44.0	44.1	43.7	43.8
Income before taxes	\$ 10,560	12,549	16,341	20,772
Other money receipts	\$ 216	246	381	615
Net change in assets and liabilities	\$ 332	572	885	1,261
Percentage				
Home owners	55.0	53.9	56.7	57.2
Car or truck owners	77.9	75.6	78.7	79.8
Average total expenditure	\$ 10,539	12,154	15,737	19,987
Percentage of total expenditure				
Food	17.5	17.1	17.2	16.1
Shelter	15.6	15.6	14.6	15.1
Rented living quarters	5.7	6.0	4.6	4.7
Owned living quarters	6.5	6.4	6.8	7.1
Other housing	0.9	0.7	0.7	0.8
Water and fuel	2.6	2.5	2.4	2.5
Household operation	4.1	3.7	3.7	3.8
Furnishings and equipment	4.6	4.6	5.0	4.9
Furniture	1.6	1.5	1.9	1.7
Household appliances	1.0	1.0	1.1	1.1
Other	2.0	2.0	1.9	2.2
Clothing	8.1	7.4	7.1	7.2
Personal care	2.1	1.9	1.7	1.6
Medical and health care	3.2	2.6	2.1	2.0
Smoking and alcoholic beverages	3.6	3.7	3.3	3.2
Travel and transportation	12.2	12.1	12.3	12.5
Automobile and truck	9.6	9.5	9.7	9.9
Purchase	4.4	4.3	4.6	4.3
Operation	5.2	5.1	5.1	5.6
Other	2.5	2.6	2.6	2.6
Recreation	3.5	3.6	3.8	3.8
Reading	0.6	0.6	0.6	0.5
Education	1.0	1.0	0.8	0.7
Miscellaneous expenses	1.4	1.8	2.1	2.2
Total current consumption	77.4	75.7	74.2	73.6
Personal taxes	15.6	17.6	18.8	19.1
Security	4.7	4.7	5.1	5.2
Gifts and contributions	2.3	2.1	1.9	2.1
Total expenditure	100.0	100.0	100.0	100.0

7.38 Patterns of expenditure for families of two or more persons, by family income quintiles¹, based on survey of eight Canadian cities, 1976

Item		First quintile	Second quintile	Third quintile	Fourth quintile	Fifth quintile	All classes
Family characteristics							
Average family size	No.	2.68	3.07	3.40	3.57	3.88	3.32
Children under 5	"	0.20	0.33	0.34	0.25	0.14	0.25
Children 5-15	"	0.53	0.62	0.78	0.79	0.80	0.71
Adults 16-17	"	0.07	0.09	0.14	0.18	0.21	0.14
Adults 18-64	"	1.31	1.99	2.14	2.32	2.67	2.09
Adults 65 and over	"	0.64	0.12	0.09	0.08	0.12	0.21
Full-time earners	"	0.30	0.87	1.10	1.36	1.54	1.03
Age of head	yr	51.1	40.8	40.1	41.6	45.2	43.8
Income before taxes	\$	7,906	14,367	19,048	24,469	38,072	20,772
Other money receipts	\$	340	709	415	560	1,054	615
Net change in assets and liabilities	\$	-363	415	788	1,339	4,127	1,261
Percentage							
Home owners		35.4	43.4	56.1	68.5	82.4	57.2
Car or truck owners		46.9	80.2	85.7	92.6	93.6	79.8
Average total expenditure	\$	8,641	14,710	18,573	23,391	34,619	19,987
Percentage of total expenditure							
Food		23.8	18.5	17.3	15.7	12.9	16.1
Shelter		22.1	16.8	16.1	14.8	12.2	15.1
Rented living quarters		12.5	7.9	5.6	3.5	1.7	4.7
Owned living quarters		5.1	5.5	7.3	8.1	7.4	7.1
Other housing		0.4	0.6	0.6	0.7	1.1	0.8
Water and fuel		4.1	2.8	2.6	2.4	2.0	2.5
Household operation		5.3	4.3	3.9	3.6	3.3	3.8
Furnishings and equipment		4.8	5.0	5.1	4.6	5.0	4.9
Furniture		1.5	1.7	1.8	1.5	1.7	1.7
Household appliances		1.1	1.2	1.2	1.0	1.0	1.1
Other		2.1	2.0	2.2	2.0	2.3	2.2
Clothing		7.3	7.0	7.2	7.2	7.2	7.2
Personal care		2.1	1.7	1.6	1.5	1.4	1.6
Medical and health care		2.5	2.2	2.1	2.0	1.6	2.0
Smoking and alcoholic beverages		4.5	3.6	3.4	3.2	2.6	3.2
Travel and transportation		9.8	13.6	12.8	12.6	12.5	12.5
Automobile and truck		7.2	11.3	10.3	10.1	9.7	9.9
Purchase		2.4	5.0	4.1	4.2	4.8	4.3
Operation		4.7	6.3	6.2	5.9	4.9	5.6
Other		2.6	2.3	2.5	2.5	2.8	2.6
Recreation		3.7	3.5	3.5	4.1	3.9	3.8
Reading		0.7	0.6	0.6	0.5	0.5	0.5
Education		0.7	0.6	0.6	0.6	0.9	0.7
Miscellaneous expenses		2.2	2.3	2.3	2.4	2.0	2.2
Total current consumption		89.5	79.7	76.4	72.8	66.0	73.6
Personal taxes		6.1	14.3	17.0	19.7	25.1	19.1
Security		2.1	4.2	4.8	5.5	6.4	5.2
Gifts and contributions		2.3	1.8	1.8	2.0	2.5	2.1
Total expenditure		100.0	100.0	100.0	100.0	100.0	100.0

¹Weighted survey records of families are arranged in ascending order by size of total income and divided into five equal groups, or quintiles. Thus, each group, or quintile, represents a weighted 20% of families.

7.39 Percentage distribution of families and unattached individuals by net worth¹, spring 1977, and by income group 1976

Wealth group	Income group								Average income %	Average income in 1976 \$
	Under \$3,000	\$3,000 to 6,999	\$7,000 to 10,999	\$11,000 to 14,999	\$15,000 to 19,999	\$20,000 to 24,999	\$25,000 to 34,999	\$35,000 and over		
Negative	10.9	12.6	14.5	12.6	8.2	4.6	2.6	1.0	9.3	10,831
Zero	8.9	2.9	0.9	0.2	0.3	0.4	0.1	—	1.5	4,616
Under \$1,000	30.1	18.9	12.3	6.4	3.0	1.5	0.5	—	9.2	6,706
\$ 1,000 - \$ 4,999	12.9	14.8	15.8	16.0	9.8	5.6	2.8	0.9	10.9	10,838
5,000 - 9,999	6.3	6.5	7.2	9.7	8.8	11.3	4.7	2.7	7.6	14,875
10,000 - 14,999	3.7	4.1	6.1	6.2	8.3	6.0	4.7	1.6	5.6	14,491
15,000 - 19,999	6.5	11.8	10.8	14.1	17.3	17.2	14.6	4.5	13.0	15,759
20,000 - 29,999	8.2	12.8	10.9	14.1	17.0	19.9	20.8	12.5	14.8	17,120
30,000 - 49,999	7.7	12.7	12.9	13.0	17.7	23.6	32.2	27.8	17.4	19,448
50,000 - 99,999	1.2	2.4	6.0	4.0	6.1	6.1	9.3	17.9	5.8	22,354
100,000 - 149,999	1.1	1.1	1.9	2.6	2.9	3.0	5.4	14.8	3.2	28,222
150,000 - 299,999	1.1	0.4	0.7	1.1	0.6	0.8	2.3	16.3	1.7	50,316
300,000 and over	0.5									
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	15,849
Mean wealth	\$ 16,657	\$ 23,692	\$ 31,235	\$ 33,896	\$ 40,612	\$ 46,567	\$ 67,939	\$ 205,859	46,273	...
Median wealth	\$ 1,065	\$ 5,680	\$ 9,506	\$ 14,140	\$ 25,086	\$ 33,449	\$ 49,223	\$ 98,200	21,754	...
Mean assets	\$ 18,121	\$ 25,455	\$ 34,950	\$ 40,794	\$ 50,974	\$ 60,701	\$ 82,224	\$ 228,128	54,482	...
Mean debt	\$ 1,464	\$ 1,763	\$ 3,715	\$ 6,898	\$ 10,362	\$ 14,134	\$ 14,285	\$ 22,269	8,209	...
Sample size	No. 942	No. 2,165	No. 1,893	No. 1,886	No. 2,138	No. 1,503	No. 1,414	No. 793	12,734	...

¹Family's wealth or net worth: total asset holdings less total debt. Total assets: liquid and other financial assets (footnotes Table 7.40), estimated market value of home and cars, equity in vacation home, other real estate and business and professional interests; not equity in life insurance, claims against retirement pensions and value of consumer durables other than cars. Total debt: consumer debt (footnote Table 7.40), other personal debt and mortgage debt on home.

7.40 Percentage composition of net worth, spring 1977, of families and unattached individuals, by income group 1976

Assets and debts	Income group							Average %
	Under \$3,000	\$3,000 to 6,999	\$7,000 to 10,999	\$11,000 to 14,999	\$15,000 to 19,999	\$20,000 to 24,999	\$25,000 to 34,999	\$35,000 and over
Assets								
Financial assets	14.1	20.4	19.2	18.0	16.6	14.8	18.9	28.5
Liquid assets ¹	12.8	17.2	15.8	14.4	12.7	11.0	13.1	10.8
Other financial assets ²	1.3	3.2	3.4	3.7	3.9	3.8	5.8	17.7
Equity in vacation home and other real estate	6.3	7.2	7.2	7.4	8.6	7.8	9.1	9.6
Estimated market value of home	51.7	50.1	47.3	49.8	55.0	60.1	54.2	29.7
Estimated market value of passenger cars	2.2	3.3	4.5	5.4	5.5	5.5	4.9	2.4
Equity in business and professional interests	25.7	19.0	21.8	19.4	14.3	11.9	13.0	29.8
Total, assets	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Debts								
Personal debt	4.1	3.1	4.7	5.9	5.3	4.4	3.5	4.3
Consumer debt ³	2.7	2.0	3.8	5.1	4.4	3.9	2.9	3.4
Bank loans against securities as collateral and other personal and institutional loans	1.4	1.1	0.8	0.8	0.9	0.5	0.6	0.8
Mortgage debt on home	4.0	3.8	5.9	11.0	15.0	18.9	13.9	6.1
Total, debts	8.1	6.9	10.6	16.9	20.3	23.3	17.4	9.8
Wealth or net worth	91.9	93.1	89.4	83.1	79.7	76.7	82.6	90.2

¹Cash on hand, deposits in banks and other institutions, savings certificates and all bonds including Canada Savings Bonds.²Stock holdings, mortgage holdings, RRSPs, RHSPs, and other assets including loans to persons and businesses.³Money owed on credit cards, charge accounts and instalment debt, bank loans (except student loans and loans secured against securities as collateral), loans from sales finance and consumer loan companies, credit unions and caisses populaires.

7.41 Percentage proportion of families and unattached individuals with selected types of assets and debts, spring 1977

Selected component	All family units		Families		Unattached individuals	
	Proportion with component %	Average amount holders/debtors only ¹ \$	Proportion with component %	Average amount holders/debtors only ¹ \$	Proportion with component %	Average amount holders/debtors only ¹ \$
Chartered bank deposits	78.3	4,443	79.3	4,792	75.7	3,492
All other deposits	33.4	5,638	37.4	5,508	22.9	6,190
Canada Savings Bonds	23.5	5,576	25.2	5,391	19.3	6,203
Total stocks	8.5	10,946	9.7	11,652	5.4	7,657
Registered retirement savings plans	14.3	6,225	16.9	6,589	7.8	4,166
Equity in business and professional interests	13.0	80,763	16.4	81,627	4.1	71,734
Own a home	59.6	43,843	72.1	45,273	26.8	33,838
Own a vacation home and/or other real estate	16.4	27,793	19.6	27,731	8.0	28,187
Own a passenger car	72.7	3,212	84.1	3,379	42.8	2,359
Bank debt ²	27.3	4,850	30.4	5,330	19.3	2,887
Consumer debt	53.2	3,468	60.0	3,825	35.6	1,904
Average income in 1976	...	15,849	...	19,010	...	7,621
Mortgage debt on home (for home-owning family units)	54.0	18,285	58.6	18,438	21.7	15,398

¹The aggregate amount of component divided by the number of family units reporting.²Includes both secured and unsecured loans, excluding mortgage loans on owner-occupied homes.**Sources**

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7.6 - 7.8 Census Characteristics Division, Social Statistics Field, Statistics Canada.

7.9 - 7.18 Labour Division, Economic Statistics Field, Statistics Canada.

7.19 Public Relations Branch, Department of Labour.

7.20 - 7.21 Labour Division, Economic Statistics Field, Statistics Canada.

7.22 - 7.23 Occupational Safety and Health Branch, Department of Labour.

7.24 - 7.25 Labour Data Branch, Department of Labour.

7.26 Public Relations Branch, Department of Labour.

7.27 Labour Data Branch, Department of Labour.

7.28 Labour Division, Economic Statistics Field, Statistics Canada.

7.29 Labour Data Branch, Department of Labour.

7.30 - 7.41 Consumer Income and Expenditure Division, Social Statistics Field, Statistics Canada.

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Canada's system of public social security programs provides income protection, health care and a range of social services for Canadians who need them. Under terms of the British North America Act the provinces bear primary responsibility for health and welfare services. The federal government assumes this responsibility for veterans of the armed forces, registered Indians, Inuit and certain other groups. Municipalities and their local voluntary agencies generally provide most direct services to the public with funding from both federal and provincial governments.

The increasing government role in provision of these programs is evident in their budgets. Between 1927 and 1979 the annual overall government social security expenditures increased from \$99 million to \$35.6 billion.

Canadian programs have roots in charitable organizations of old Quebec, in traditions of the English poor law and parallel developments in the United States. In general, programs have been developed to meet social needs in the context of the Canadian economy. Provinces and municipalities introduced income support for single parent families, for injured workers and their families and direct relief payments to the poor. Grants were also provided to support public health and welfare institutions. The federal government introduced income support in 1918 for war veterans, in 1927 for the aged and during the depression in the 1930s provided emergency relief for destitute persons. Following World War II, the federal government extended its responsibilities for income support through unemployment insurance and universal allowances for the aged and for families with growing children. Later, priorities for senior levels of government shifted to the introduction of universal health insurance and income insurance programs funded on a broad population base. Recently the trend has moved toward a negative income approach through tax credits.

Target groups for social security programs

8.1

The elderly

8.1.1

The average person at age 65 may expect to survive to 80 years of age. Because of greater life expectancy and reduced work opportunities in old age, increasing attention is being given to the needs of the elderly for income support and services.

At age 65 almost all persons with established residence in Canada become eligible for monthly payments under the federal old age security program. Besides a basic old age security (OAS) benefit, a person with little or no other income may apply for a guaranteed income supplement (GIS). If the person has a spouse between the ages of 60 and 65, also with little or no personal income, the spouse may apply for a spouse's allowance (SA).

Elderly persons may also receive cash benefits under the Canada Pension Plan (CPP) or the Quebec Pension Plan (QPP). In addition to the federal old age security program, provincial income tested supplements are available in several of the provinces; these are paid monthly in Ontario, Saskatchewan, Alberta and British Columbia, quarterly in Manitoba and annually in Nova Scotia and Northwest Territories. Shelter allowances in the form of tax credits or rebates for the elderly are provided in New Brunswick, Quebec, Ontario, Manitoba, Saskatchewan, Alberta and British Columbia.

More than 250,000 elderly persons in Canada are in homes for special care. Old people have access to a variety of social and health services in their communities involving home care, visiting nurse services, meals delivered to their homes (meals-on-wheels) and recreational programs. The federal New Horizons program stimulates activities among old people by funding projects of community interest. There are also various volunteer advocacy organizations sponsored by the elderly.

A federal interdepartmental task force on retirement income policy was established in 1976 with participants from the departments of finance, health and welfare,

insurance, and labour, the Privy Council office and Treasury Board secretariat. A special Senate committee on retirement age policies was appointed in December 1977. Reports from both groups were being studied in 1980 to permit a review of government policies for the aged. A national advisory council on aging was set up in May 1980 to advise the health and welfare minister on the needs and problems of older people and recommend remedial action.

8.1.2 The work force and families

Income protection for the work force comes largely through the unemployment insurance program to which almost all persons in the labour market contribute. Employers also contribute regularly to provincial worker compensation programs to provide income protection for workers injured on the job and for surviving families of workers killed in industrial accidents. The federal and provincial governments enter into contracts with private industry to provide facilities for on-the-job training to enable workers to acquire new skills.

The Canada Pension Plan and Quebec Pension Plan are other universal contributory programs which provide income protection for the worker. Benefits are available for workers required to retire prematurely because of disability and for their dependent children. In the event of premature death of a worker, the widowed spouse receives survivor benefits, and allowances are provided for dependent children.

Other provisions are made to protect workers not receiving sufficient income to provide for themselves and their families. In Saskatchewan a family income program (FIP) is designed to provide a monthly supplement to the income of the breadwinner in families with inadequate earnings. A similar program was initiated in Quebec in 1980 with supplements paid quarterly.

Families receive continuing income support from the federal government in monthly family allowances cheques as long as they have dependent children under 18 living at home. (Tables 8.1 and 8.2 provide details.) They may also claim a child tax credit for dependent children when paying income taxes and tax deductions for child care expenses (Table 8.3).

In all provinces, welfare programs under the Canada Assistance Plan (CAP) provide income support for families and individuals in need, based on calculated budget deficits. These social assistance programs, cost-shared by the federal and provincial governments, apply to workers with seasonal unemployment or families suffering loss of income because of work layoff or absence of a working spouse.

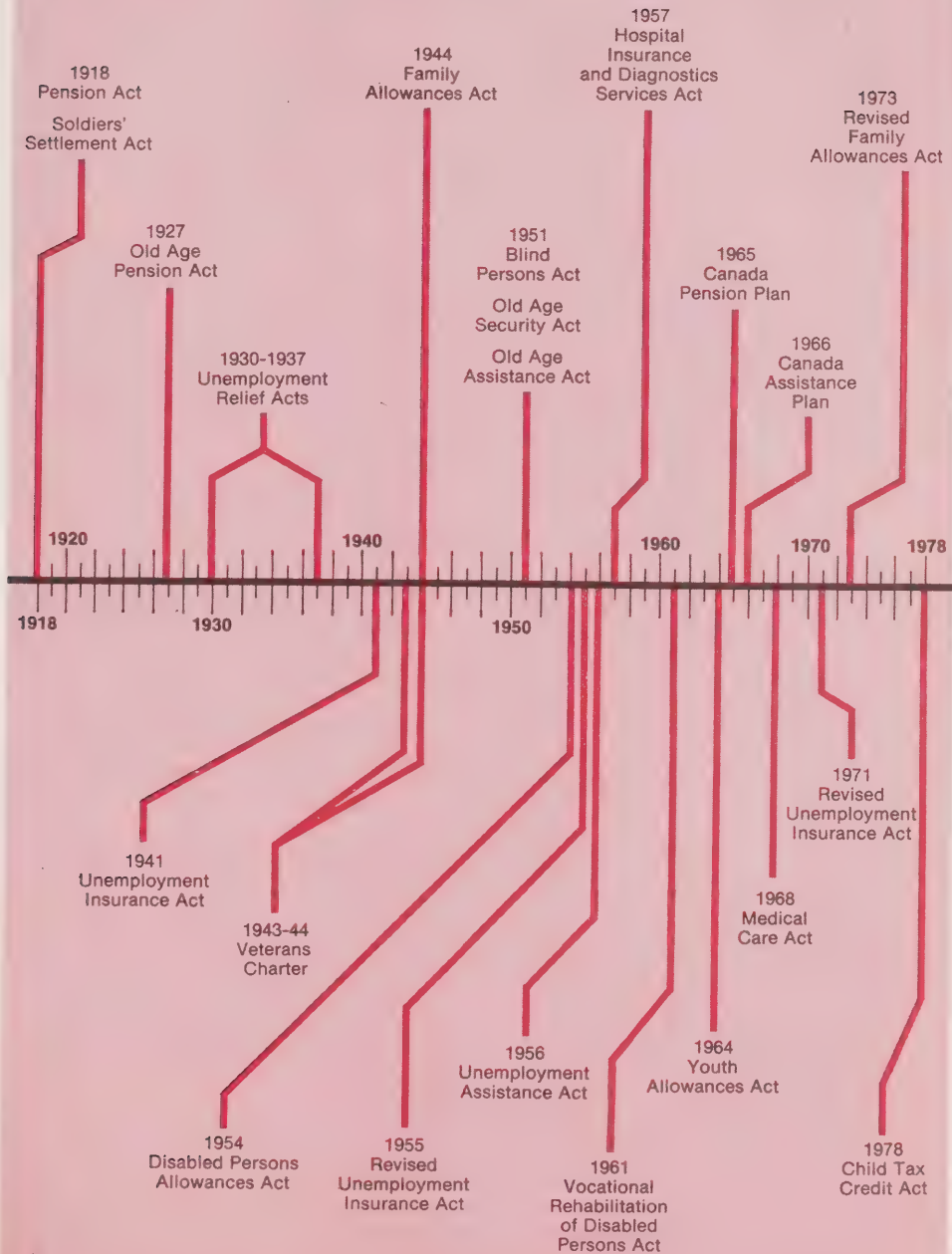
Child welfare programs in all provinces protect children who are abandoned or neglected, who require adoption services, or who must be placed in foster homes or in institutions. For older children, clinics and community services deal with problems of drug abuse and addiction and with care and placement of children in conflict with the law or with their families. For single parent families, social workers help the parent to maintain an integrated family through co-ordinated child care services and activity programs. Social agencies also deal with behavioural or financial problems of family life. This may involve integrating welfare services with related services in the schools, law enforcement systems or the health field. Basic health care is provided through the health insurance system supplemented by community health programs.

8.1.3 The disabled

There is growing concern with needs of the disabled, both for rehabilitation and development of optimum living conditions. Attempts are being made to integrate the disabled into the community through group homes and through work activities in sheltered workshops and special community projects. This includes the mentally handicapped as well as those who are mentally or physically disabled.

Recent estimates place the number of disabled in Canadian communities at close to 2 million with an additional 250,000 in institutions. Many are elderly but close to 1.5 million are of working age. Of the 400,000 unable to work, approximately one-third are permanently disabled and the remainder are considered temporarily absent from the work force. The extent of income support is shown in estimated program caseloads for December 1979, as follows: CPP and QPP, 100,000; provincial social assistance, 165,000;

Major federal social security legislation, 1918-78



Source: Social Security Statistics, Information Systems, Health and Welfare Canada.

worker compensation, 85,000. These were all disability cases. There were also 150,000 receiving unemployment sickness benefits, making a total of 500,000 disabled under income support. These figures indicate that the remaining million disabled persons of working age were employed, keeping house or going to school.

In 1980 a federal task force held hearings across Canada to receive briefs from and on behalf of the disabled. Canada also hosted the Congress of Rehabilitation International in Winnipeg in June 1980 and was co-operating with other countries as part of the activities associated with the International Year of the Disabled, 1981. Integrated programs for the disabled are being developed to take account of their need to participate in the social and economic life of the community through innovative aids to daily living, modifications to the workplace and improved access to buildings and transportation systems.

8.2 Federal income programs

8.2.1 Old age security program

The old age security (OAS) benefit or basic old age pension has been in effect since 1952. It is available to all Canadian citizens and qualified residents aged 65 and over. Since 1967 pensioners with little or no other income have also been eligible for a guaranteed income supplement (GIS) which is renewable annually. Since October 1975 a spouse's allowance (SA) has been available for the spouse of a pensioner with little or no income when the spouse's age is between 60 and 65. The overall cost of the old age security program for the fiscal year 1978-79 was \$5.49 billion (Table 8.4).

Old age security. The basic old age security benefit was designed as a flat rate benefit available to all qualified residents. Since 1973 the amount of benefit has been indexed on a quarterly basis in order to maintain its purchasing power.

In July 1980 the basic monthly pension was \$191.28, and 2.2 million people were receiving it. For a full pension the applicant must have been resident in Canada for 40 years after the age of 18 or for 10 consecutive years immediately prior to receipt of the pension. In July 1977 the basis for eligibility was modified to introduce the concept of a partial pension based on the number of years of residence.

Guaranteed income supplement (GIS). Since 1967 old age pensioners with little or no personal income have been eligible to receive a guaranteed income supplement which is intended to provide a basic standard of living for the elderly. In July 1980 a single pensioner with a maximum supplement was eligible to receive a monthly cheque of \$383.31 (\$191.28 OAS plus \$192.03 GIS). The maximum combined pension for a married couple was \$678.00. For pensioners with personal income, the supplement is reduced by \$1 a month for every \$2 of other personal income.

Spouse's allowance (SA). In October 1975 the federal government introduced an additional allowance payable to pensioner spouses 60-64 years of age. The program is income tested in the same manner as the GIS for a married couple. If there is no personal income in the family the maximum SA equals the amount of the OAS pension plus the maximum GIS at married rates. Thus in July 1980 the maximum SA was \$339.00. As with the GIS the SA is reduced in accordance with the amount of personal family income. In 1980, SA recipients became eligible to continue to receive their benefits following death of the pensioner spouse.

There has been a continuing increase in expenditures for these three benefits during the 1970s (Table 8.5). The largest single factor was the indexing of benefits after October 1973 in accordance with the quarterly increase in the consumer price index. Inflation of benefits under this index has been running between 10% and 11% annually in recent years. There has also been an increase of 2% to 3% annually in the population receiving OAS benefits. Both these factors may be expected to continue with a corresponding growth in the OAS expenditures. With GIS and SA programs effects of interacting legislative changes make it more difficult to estimate future trends but increased expenditures may be expected.

Family allowances

8.2.2

Federal family allowances are paid monthly on behalf of children up to the age of 18 years. To qualify a child must be dependent on parents or guardians who are Canadian citizens or legal immigrants. Normally the allowances are paid to the mother of the child.

In 1980 the family allowance payment was \$21.80 a month in most of Canada for children cared for in their own families. A special allowance was paid for children under 18 who were in the care of institutions, welfare agencies, government agencies or foster parents. This was indexed to \$30.51 a month in January 1980.

The Family Allowances Act, 1973, allows a provincial government to specify rates to be paid in its province, based on age of the child, number of children in the family or both. Quebec and Alberta are the only provinces which have chosen this alternative. Quebec has an additional provincial family allowance supplement. Table 8.2 gives the rates for 1979 and 1980. Prince Edward Island used to pay a \$10 supplementary allowance for the fifth and any subsequent child in a family, but this was discontinued in 1980.

Background. The federal family allowances program was initiated after World War II to provide a basic monthly payment to Canadian families for each child up to age 16. In 1964 coverage was extended to children of first year immigrants and children of 17 and 18 years who continued attending school. In 1973 the Family Allowances Act was revised to cover children up to the age of 18 living at home. Monthly benefits were increased to \$20 a month and provision was made to index them to correspond to the rising cost of living. In 1978 the indexed value was \$25.68 a month. In January 1979 the basic benefit was reduced to its 1974 value of \$20, but a new child tax credit (Table 8.3) was introduced to pay back \$200 a child when families paid their income tax, for children under 18 years in families with gross income under \$18,000 for 1978. For higher incomes the value of the tax credit was reduced at a graduated rate. For 1979, through indexing the basic child tax credit was increased to \$218.

Income security expenditures

8.2.3

The federal government also provides income security payments to persons enrolled in manpower training, to registered Indians and war veterans. For those enrolled in institutional and industrial training, income support is provided for the worker and his or her dependents.

In 1978-79, payments under Canada manpower training programs amounted to \$200.7 million, a marked decrease from the previous year. This decrease was offset by increased use of unemployment benefits (\$118.4 million in 1978-79) to support manpower training. Federal payments of social assistance to registered Indians on reserves accounted for \$104.0 million, a sizable increase over 1977-78 (Table 8.6). Payments to the veteran population both for war related pensions and for the war veterans allowance program amounted to \$673 million in 1978-79. Table 8.7 gives data by province on recipients and payments from 1972 to 1979. Adding these expenditures to old age security and family allowances payments, the total federal spending on income security in 1978-79 was \$8,458 million, an increase of nearly \$0.5 billion over 1977-78 (Table 8.8).

During the period 1966-68 there was significant growth in expenditures for federal income security programs, particularly with the introduction of manpower training allowances and extension of benefits under the old age security program.

Another growth period was 1972-75 largely because of the revised unemployment insurance program, indexation of old age security and the taxable family allowance program. Since that time the year-to-year increases of these expenditures have tended to moderate rather rapidly, from 27.8% in 1974-75 to 6.3% in 1978-79.

Federal-provincial income assistance

8.3

Initially the provinces and the municipalities provided welfare payments to persons in need. With increasing costs, especially during the depression years, the provinces could not independently handle this kind of responsibility. The federal government was

required to provide for ad hoc relief funding on a large scale for many families who were unemployed and without financial resources. Between 1930 to 1937 the federal treasury provided more than \$800 million for relief payments under emergency legislation.

The necessity for federal participation in providing income security at the community level has persisted though the provinces have initiated new strategies to alleviate personal financial need. General assistance programs came into force in 1955 with the Unemployment Assistance Act administered by the federal government which allowed for 50% cost-sharing in provincial welfare programs for families and individuals.

8.3.1 Canada Assistance Plan

Since 1966 the Canada Assistance Plan (CAP) has largely replaced unemployment assistance and such categorical programs as benefits for the blind and the disabled, allowances for single mothers and pensions for the elderly. The Canada Assistance Plan was introduced during a period when parallel developments included the Canada Pension Plan and Quebec Pension Plan, a universal unemployment insurance program and medical health insurance; some of the public responsibility for maintenance of family income has shifted to these other programs.

CAP provides for 50% cost-sharing by the federal government in provincial government programs to provide financial aid to families in need. Table 8.9 provides data on payments and recipients, and Table 8.10 relates the expenditures to all social security spending. While definitions of need vary somewhat among provinces, the general structure of family budgets includes components for basic daily living: food,

The growth of social security expenditures was roughly parallel to growth of the economy in the period 1976-79, rising to \$35.6 billion. This contrasts with the \$99 million spent on social security in 1927.

shelter, clothing and personal care. Provision is made for special needs such as school books for children, transportation and equipment if necessary to obtain employment, health care or other essential services. A family budget is set up. The difference between money available from a person's private resources and that required under the calculated family budget represents the social assistance payment.

There are three main types of social assistance clients. Single parent families with female heads usually form the largest sector. Second are clients on assistance because of physical or mental handicap or disability, including chronic illness; they are unable to earn a living independently though they may have some marginal participation in the work force. Third are families and individuals underemployed or temporarily unemployed and not fully protected by unemployment insurance, the elderly and persons in crisis situations who are unable to maintain themselves.

Provincial welfare departments set rates of assistance and conditions of eligibility. They have regulatory and supervisory powers over municipal administration of assistance, and require certain standards as a condition of provincial aid. The municipality of residence may administer the benefits locally. The provinces generally take responsibility for aid to persons residing outside municipal boundaries and for those who lack municipal residence.

8.4 Income insurance programs

8.4.1 Unemployment insurance and compensation payments

The high cost of relief payments before World War II convinced the federal and provincial governments of a need to establish reserves to meet contingencies of high unemployment and economic depression. The federal government took the initiative with the 1941 Unemployment Insurance Act. It required the consent of all provinces through an amendment to the BNA Act to permit the federal government to introduce

such legislation. Originally designed to provide income protection for low income earners, the unemployment insurance program was revised several times until in 1971 it was made universally applicable to all members of the labour force with certain minor exceptions. Benefits were extended to persons at all levels of earnings. While providing full coverage of unemployment, the program was also broadened to provide benefits for those suffering from extended sickness, for women having to leave the labour force temporarily because of pregnancy and childbirth, and supplementary benefits to unemployed fishermen and to persons undertaking manpower training courses. In the fiscal year 1978-79, unemployed workers received \$3.9 billion in benefits and \$557 million was paid under these added benefits. Other major programs providing income insurance are the provincial worker compensation programs. During 1978-79 worker compensation boards across Canada paid \$768 million in cash compensation benefits to injured workers and their dependents or survivors. More information on both these programs is given in Chapter 7, Employment and incomes.

Canada and Quebec pension plans

8.4.2

The second federal initiative in income insurance came with the introduction of the Canada Pension Plan (CPP) in 1966. The CPP applied to all provinces except Quebec, which undertook to develop its own insurance program, the Quebec Pension Plan (QPP). There is reciprocity between the two programs, so all Canadians between 18 and 64 in the labour force are covered.

Initially proposed in 1963 to provide only for retirement benefits, as finally introduced the CPP and QPP provided also for survivor benefits for a widow or widower and dependent children when the contributor dies prematurely, a death benefit, disability benefits to contributors forced to retire early because of disability and benefits for their dependent children. In 1978-79 under these programs combined, total payments to beneficiaries amounted to over \$1.8 billion (Table 8.11).

Both the CPP and QPP are funded by equal contributions of 1.8% of pensionable earnings from the employer and 1.8% from the employee. Self-employed persons contribute the full 3.6%. In 1980 the range of contributory earnings was from \$1,300 to \$13,100.

Retirement pension is payable at 65 years at the earliest and is calculated at 25% of the average adjusted contributory career earnings. The minimum period for averaging earnings is 120 months. As of June 1980, the maximum retirement pension payable under the CPP or QPP was \$244.44.

Survivors pensions are payable to the family of a contributor who dies prematurely, after having contributed to the Canada or Quebec pension plans for at least one-third of the calendar years for which he or she could have contributed. The pension is calculated as a flat rate component plus a component based on the computed retirement pension of the deceased contributor. The age and family status of the surviving spouse also influences the amount of pension payable. In January 1980, the maximum benefit payable to a widow or widower under the Canada Pension Plan was \$148.92; under the Quebec plan, with a larger flat rate benefit, the maximum benefit was \$238.45.

Disability pensions. If a contributor suffers severe and prolonged mental or physical disability to a degree that requires withdrawal from the labour force, that person may apply for a disability pension. The applicant must have contributed for at least five whole or part calendar years within the last 10 years. The application is subject to a medical review before a pension can be awarded. The pension may be payable four months after the disability occurred. As with survivors pensions, the disability pension consists of a flat rate component plus a computed value of the retirement component. There is no discounting of disability benefits because of a pension received from a worker compensation program or from a private disability insurance plan. In June 1980, the maximum disability pension payable under the CPP was \$240.58; the maximum disability pension under the QPP was \$330.11.

Children's benefits. The Canada and Quebec pension plans provide benefits generally to the age of 18 for dependent children of disability pensioners and of surviving spouses.

When the child continues in education, the benefits may be paid to the age of 25. Equal benefits are payable for all children in a family regardless of the number. In June 1980, under the CPP the average child benefit was \$57.25 per month and under the QPP, \$29.00; there were more than 180,000 children receiving benefits.

Death benefit. When a contributor dies prior to retirement, a lump sum death benefit is payable to the person's estate if the individual has contributed to the plan for at least one-third of the calendar years possible. In January 1980 the value of the death benefit under the CPP and QPP was \$1,310.00.

Sharing pension credits. When a marriage ends in divorce or legal annulment, provision is made for the pension credits earned by one or both spouses during their years of marriage to be divided equally between them. They must have lived together in marriage for at least three consecutive years. Application for division of credits must be made within three years of the dissolution of marriage.

Program administration. The programs are administered through regional offices across Canada with central control over eligibility for benefits and payment of pensions. Contributions are administered through the taxation systems of the federal and Quebec governments. Excess funds collected are lent to a provincial government, based on the ratio of contributions from that province to total contributions. CPP funds not borrowed by the provinces are invested in federal securities.

For CPP, an advisory committee representing employers, employees, self-employed persons and the public regularly reviews the operation of the plan, the state of investments and the adequacy of coverage and benefits, and reports to the federal health and welfare minister. CPP authorizes reciprocal agreements with other countries to achieve portability of pensions. Such agreements have been made with Italy, France and Portugal, and discussions were in progress with the United States. Generally, parallel provisions apply under QPP.

Table 8.11 provides an analysis of Canada and Quebec pension plan payments including benefits for retired persons, the disabled and survivors over the period 1970-79. Retirement pensions of the CPP and QPP are still in early stages of development in that increasing years of contributions lead to progressively higher benefits for the individual. With the rapid growth of the labour force, particularly with the higher participation rates for women, it is expected that the number of beneficiaries will continue to increase rapidly. For survivors and for disability beneficiaries, future increases in payments will be more conservative because of the flat rate benefit payable to all persons with a minimum number of years of contribution. The number of new cases of disability entering the system is also fairly stable. Thus from 1970 to 1975 total payments for disability and survivors benefits exceeded the total payments for retirement benefits but by 1979 total payments for retirement beneficiaries were two-fifths higher than for survivors and disability beneficiaries.

The per capita expenditures have increased at a rapid rate with a 25-fold increase between 1970 and 1979 from \$3 to \$76. However, the annual proportionate increase in expenditures is starting to decline.

There has been a steady increase, however, in the proportion of total social security payments generated by the Canada and Quebec pension plans, from less than 1% in 1970 to 5.1% in 1979, both fiscal years ending March 31.

8.4.3 Funding income insurance programs

In 1965 when the CPP and QPP were introduced, the decision was made that these programs would be publicly funded, based on contributions from all employed persons from 18 to 70 with pensionable earnings. By the end of 1978, the balance of funds in the CPP account was \$14.36 billion. The comparable figure for the QPP in December 1978 was \$5.27 billion.

The unemployment insurance program was also set up on a funded basis. Contributions were made to the fund by all employed workers according to a formula that was later substantially modified. Since 1972 annual expenditures under the unemployment insurance program have required additional money from the

consolidated revenue fund to meet payments to beneficiaries. In the fiscal year 1977-78, total revenues from premium contributions to the unemployment insurance fund amounted to \$2.6 billion. Changes in regulations have been made to control the growth in unemployment insurance payments by modifying the program, extending the number of work weeks required to become eligible for benefits and tightening the regulations for continuation of benefits.

Worker compensation, administered as a government agency on behalf of the employers of each province, is financed by contributions entirely from business, industry and government enterprises in each province. As of December 1977, the estimated balance in the worker compensation accounts was \$1.5 billion. A substantial balance is always held in reserve to provide for future payments of pensions for injured and deceased workers.

Trends in federal and provincial expenditures. Between 1971 and 1979 there was more than a fivefold increase in expenditures on income insurance programs with a per capita increase from \$58 to \$299, as shown in Table 8.12. Considering all expenditures on social security, income insurance programs increased from 12.2% in 1971 to almost 20.0% in 1978-79. Since these programs are largely funded, these figures reflect the cushioning effect which income insurance programs have on the heavy drain on current government revenues from increased income maintenance expenditures during periods of recession.

Welfare programs

8.5

In a number of areas provincial initiatives go beyond the guidelines of cost-sharing under CAP, and programs are entirely financed by the individual province. There is little uniformity among the provinces in classifying institutions which care for the aged, the disabled and persons in need. Other constraints apply to the definition of services and facilities under health or welfare. Similar types of care may be administered under different auspices in various provinces. In some instances the care may be limited to those in need according to the CAP guidelines; in others, the programs may be universal in nature and appear available to the total population. Some of the more clear-cut provincial initiatives may be classified as welfare. Where there is CAP funding of health care resources for services, the costs have been assigned to the health area.

Provincial welfare

8.5.1

In Newfoundland provincial social assistance programs provide support and supplementary income and are provincially administered under CAP cost-sharing arrangements. In Prince Edward Island until 1979 a \$10 provincial supplement was paid monthly for every 5th and subsequent child under the federal family allowance program. In Nova Scotia low income elderly persons received a maximum provincial cash contribution annually (\$176 in 1980). In New Brunswick the supplementation of income in cases of need was based directly on CAP cost-sharing arrangements. In Quebec a program for supplementing family income pays a provincial family allowance supplement for each child already receiving federal family allowances. In 1980 Quebec also authorized a supplement of \$60 monthly for each disabled child.

As of July 1980 Quebec planned to pay quarterly benefits under a provincial guaranteed income program with an average payment of \$321 per family; this program has not been cost-shared.

In Ontario the GAINS program (guaranteed annual income system) is available to persons 65 years of age and over to ensure an adequate basic income. This program is not cost-shared with the federal government but a comparable supplement for the disabled is cost-shared. In 1980 the maximum monthly income guaranteed to a single pensioner was \$379.03, including the old age security benefit where applicable. For a married pensioner the similar income guarantee in 1980 was \$369.03. Ontario and Quebec spend more than \$200 million each on income supplement programs.

In Manitoba under the Social Service Administration Act a supplement for the elderly was available to low income pensioners under the old age security program. The

maximum benefit was approximately \$25 quarterly. The Saskatchewan Income Plan (SIP) provided a monthly supplement to elderly pensioners under the old age security program with a maximum annual benefit of \$300 for a single pensioner and \$270 annually for the spouse of a married pensioner.

Saskatchewan provided an income supplement to low income working families with children. Families eligible in 1979 were those with incomes up to \$6,200 plus family allowances. Over this level, benefits were reduced by \$1 for every \$2 of family income. The maximum benefits were \$600 annually for each of the first three children and \$450 annually for the fourth and each subsequent child.

Alberta, under an amendment to the Senior Citizens' Benefit Act, paid a guaranteed income to senior citizens receiving the old age security benefit ranging between \$10 and \$47.20 a month. Under the Assured Income for the Severely Handicapped Act Alberta, a maximum monthly handicap benefit was \$385 in April 1980.

British Columbia, under the Guaranteed Available Income for Need Act, provided a guaranteed income to individuals aged 60 and over and to handicapped persons of 18 to 59. In 1979, the full guaranteed minimum monthly supplement under the GAIN program for persons under the old age security program was \$38.88 for single and \$49.83 for married persons where both were eligible. The guaranteed minimum income for persons aged 60-64 not under the federal old age security program was \$305 for a single recipient and \$580 for a married couple where both were eligible. The same income limits applied to handicapped persons.

Tax credits and rebates. Since 1972 the provincial governments have introduced a number of tax credit programs. Some operate through the federal income tax system. Others are provincially administered and some operate through the municipal or regional tax system. As examples, New Brunswick, Manitoba and Alberta have rental assistance programs for senior citizens and Quebec has a school tax rebate. Programs and the population covered are shown in Table 8.13.

A summary of the overall spending by provincial welfare administrations independent of federal government funding is shown in Table 8.14. As part of the total social security expenditures, the provincial initiatives fluctuated from 6.7% in 1966 down to 2.3% in 1972 and back up to 7.2% in 1978-79. Following the introduction of the Canada Assistance Plan in 1966, autonomous provincial initiatives as a share of the total social security budget declined considerably. In 1972-73 there was an increase of 52.1% in provincial spending and in 1973-74 the increase jumped to 137.3%. There was also a

Increasing attention is being paid to the elderly because of their growing number, and to the disabled to help them establish themselves in the work force.

sharp increase of 31.1% in 1977-78. The provincial tax credits and rebates for shelter were perhaps the most striking developments in many of the provinces. These expenditures exceeded \$1.0 billion in 1978-79 and have been a major component of autonomous provincial welfare expenditures since 1973-74. Expenditures on income supplementation for the elderly and the disabled were other major areas of provincial social security initiatives. In most provinces supplements for the aged are directly additional to the federal OAS benefits. Only some provinces provide similar income guarantees for disabled persons and persons in the 60-64 age group.

8.5.2 National welfare grants

The National Council of Welfare provides the minister of national health and welfare an independent source of advice reflecting the concerns and experience of low income Canadians and those who work with them. The 21 members include past and present welfare recipients and other low income citizens, social workers and other people involved in the social welfare field.

A national welfare grants program was set up in 1962 to help develop and strengthen welfare services in Canada. Project grants are made to provincial and municipal welfare departments, non-governmental welfare agencies, citizens organizations and universities. Fellowships at Canadian and other universities are provided to individuals seeking advanced training in social welfare. The variety of provisions within the program, and its consulting services, allow it to operate as a flexible instrument in the development of welfare services and to emphasize experimental activities. The allotment for the fiscal year ending March 31, 1979, was \$4.5 million.

International welfare

8.5.3

Canada is involved in social development activities of the United Nations, particularly with the United Nations International Children's Emergency Fund (UNICEF) and in social programs of the Organization for Economic Co-operation and Development (OECD). Federal and provincial departments and agencies participate in the work of several international non-government organizations. Program information is exchanged on social affairs with UN agencies, the Council of Europe, OECD, the Overseas Development Institute and social affairs departments in other countries. The health and welfare department arranges for training in Canada of fellowship recipients, foreign students and government officials recommended by their governments.

Canadian officials participate in an international social security association and the social security program of the International Labour Organization. A convention of social security has been concluded with Italy, agreements have been signed with France and Portugal, and discussions have been held with other countries including the United States.

In 1979, the national health and welfare department co-ordinated planning for the International Year of the Child. A \$1 million fund was created to provide money for citizen projects and a commission was set up to provide direction to co-ordinate public activities of the national effort.

In June 1980 Canada served as host to an international congress on rehabilitation in Winnipeg and several seminars were set up to take place concurrently across Canada. The federal government also made plans to co-ordinate national participation in support of the UN International Year of the Disabled in 1981.

Social services and related welfare services

8.6

It has become increasingly recognized that persons in need in the community are more likely to maintain themselves and become integrated into community life if they remain in that location and if effort is made to enable them to acquire help and rehabilitation without having to go into institutions permanently. Growth of rehabilitative health and welfare services has tended to strengthen this approach. There has been a proliferation of social services and voluntary activity at the community level, with the provincial and federal governments picking up a share of the costs without directly administering the services. This has included the development of group homes, community centres and sheltered workshops.

A second factor has been the need to broaden services to handle clientele with a variety of problems. Health, welfare, and social environment factors are seldom isolated from one another. For persons with major problems it may require the collective efforts of a team to provide the necessary services and support. There has been more effort recently to establish a full network of community services with referral between them.

In 1966, through the cost-shared Canada Assistance Plan, the federal government took the initiative to help the provinces develop social services programs on a comparable basis and to ensure that social assistance money could meet basic day-to-day requirements of individuals and families. Although welfare services are primarily directed to those with little or no income, the need for the services is not restricted to them. Social agency resources are frequently extended to meet the problems of normally independent families or individuals, helping them cope with debts, problems of drug abuse and marital incompatibility. In some cases, such as with the aged, free access to community social and related services may be a means of helping them

maintain independence. For example meals-on-wheels programs may enable elderly clients to maintain an adequate diet while continuing to live in their own homes.

Social services programs may provide such services as crisis intervention, information and referral, and family planning to anyone who applies for them. Specific services are provided to designated groups, including children, the elderly and the disabled. Examples are residential services to those needing institutional care, and social integration services to persons who are or may become socially isolated from community life.

Welfare services, including counselling and assessment, casework, rehabilitation services, community development and day care, homemaker and adoption services are provided to persons in need or to persons likely to become in need were they not to receive these services. The federal government shares in costs of salaries and employee benefits, related staff training, research and consulting services which may be provided by provincial or local governments or provincially approved agencies.

8.6.1 Provincial services for children

All provinces and territories have legislation governing basic child welfare, including the protection and care of children, adoption services and services to unmarried parents. In most provinces, services are designed to prevent child neglect. A number of provinces offer help to families in emergency situations. By agreement with the parents, this may take the form of help for a child in his own home or a temporary foster home.

These services are administered by provincial departments of social services through a division of child welfare. Direct services are provided through regional or local offices or by approved agencies such as children's aid societies.

Protection services may include supervision of a child in his own home when there is some element of identifiable neglect or need for protection. If it seems necessary for protection of a child to remove him from home, the child welfare authority may take him to a place of safety, but the child must be brought before a court within a specified time. If the child is found to be neglected or in need of protection as defined in provincial law he may be committed temporarily or permanently to the care and custody of the provincial child welfare authority. Care is provided in a foster boarding home, group home or specialized institution.

Adoption. The provincial child welfare authority arranges adoption placements where this appears appropriate. Children eligible for adoption are those legally available, that is, in the permanent care and custody of the child welfare authority and those whose parents have formally given them up for adoption. An adoption desk in the national health and welfare department provides a co-ordinating and facilitating service to the provinces for international and interprovincial adoption.

Day care has been a priority in child services during recent years. A day care information centre in the national health and welfare department was set up in 1972 to act as a clearing house for materials on day care and to afford persons and groups involved in day care an opportunity to exchange information.

As of March 31, 1978 there were approximately 82,279 day care spaces in facilities across Canada, including 7,763 family day care spaces. The number of spaces has remained relatively static over recent years but there has been a substantial increase in family and after school day care programs at the expense of full day care programs. Centres sponsored by community boards and commercial operators account for the bulk of public day care activities. A small proportion is sponsored by public authorities and parent co-operatives. Subsidies for day care services for children in need, or likely to become in need if they do not receive the service, are provided by provincial and municipal authorities and are cost-shared under CAP.

In 1978-79, cost-shared expenditures for child welfare were \$164.8 million and for care of children in institutions, \$323.9 million.

8.6.2 Programs for the elderly

Programs and services available to the aged vary from province to province. Although by no means organized in all areas, such services as visiting nurse, homemaker,

counselling, information and referral, meals-on-wheels, friendly visiting and housing registries have been set up under public and voluntary auspices. Low rental housing projects have been built in many communities. Clubs and centres to provide recreation and social activities have been developed. Most provinces have shelter assistance programs to provide financial relief for housing costs to senior citizens who are either tenants or home owners.

Homes for the aged and infirm are provided in all provinces under provincial, municipal or voluntary auspices and are required to meet standards set out in provincial legislation. Regardless of auspices, homes for the aged are usually inspected and in some provinces must be licensed.

Small proprietary boarding homes for the care of well elderly persons are found in some provinces. Those who suffer from long-term illnesses may be cared for in chronic or convalescent hospitals, private or public nursing homes or homes for the aged. Costs of care in the chronic or convalescent hospitals are usually included under provincial hospital plans. Many provincial plans levy authorized charges, particularly for extended care. For needy persons, federal sharing is available toward the full costs of institutional care not covered under the federal-provincial fiscal arrangements of the Established Programs Financing Act. Through EPF legislation the federal government contributes to the costs of extended health care based on a per capita grant formula.

Under CAP, shared funding of institutional care is provided toward costs of room and board, clothing and non-insured health services for persons in need.

Homes for special care under CAP include homes for the aged, nursing homes, hostels for transients, homes for unmarried mothers and child care institutions. In March 1979, there were about 5,000 homes for special care listed in the schedules to CAP agreements. These included about 230,000 beds of which 42% were in homes for the aged and 24% in nursing homes. In varying degrees, all provinces make capital grants toward the construction or renovation of homes for the aged by municipalities or voluntary organizations; such homes are generally exempt from municipal taxation.

Cost-shared federal-provincial payments for homes for special care and for extended care amounted to \$1.3 billion in 1978-79. For 1979-80 the federal contribution under EPF for extended health care alone was estimated at \$584 million.

New Horizons program. This program for retired Canadians, announced by the health and welfare minister in July 1972 and granted continuing status in 1975, is designed to alleviate the loneliness and sense of isolation of many older people by offering them the opportunity to participate more actively in the community. Grants are available to groups of retired Canadians, generally no less than 10, to plan and operate non-profit projects using their talents and skills for their own or community betterment. New Horizons is not an employment program; participants receive no salary. There is no fixed limit to the amount of a grant. Projects may be funded for up to 18 months, but many services and activities continue to be self sustaining after the grant is terminated. Projects include physical recreation, crafts and hobbies, historical, cultural and educational programs, social services, information services and activity centres. As of September 1979, a total of 11,930 projects had been awarded \$72 million.

Spending related to trends

8.6.3

Information compiled on federal cost-sharing in provincial social services through agreements under CAP indicates trends. From 1968 to 1979 joint spending by provincial and federal governments on social services increased from \$11 to \$52 per capita. Although the number of children of minority age declined appreciably, there was an increasing demand for services from the expanding population of elderly persons and a growing recognition of the needs of the handicapped. Expenditures fluctuated with increases as low as 10% in 1973, as high as 58% in 1976 and only 6.9% in 1979. In 1978 some expenditures on institutional care were transferred from cost-sharing arrangements associated with CAP to the block funding of extended health care under the Established Programs Financing Act.

Provincial budgets for social services showed growth and many innovative programs were being developed. Child abuse continued to be recognized as a public

problem and new approaches to dealing with it were being tested. One initiative has been the transfer of welfare cases from an institutional environment to group homes in the community. These operate as self-administered units for such groups as the handicapped or the aged. For the mentally handicapped and juveniles, there is often a need for a co-ordinating worker to live in the home, to help the residents maintain independent living. Such a residence is sometimes associated with a workshop.

There is increasing recognition of the need to design living environments to accommodate the elderly and the handicapped and to make optimum use of mechanical aids and work instruments to facilitate their participation in the tasks of daily living.

Workshop facilities are being extended rapidly. These include commercially operated industries which produce competitively on the market and earn a profit. They employ a number of mentally or physically handicapped people. Sheltered workshops and activity centres employ an increasing proportion of handicapped persons; these operate on a non-profit basis but generally manage to meet production expenses. By this type of activity, handicapped persons contribute considerably to their own maintenance and rehabilitation. Other community facilities for the elderly and handicapped are essentially social activity centres where persons who would otherwise be inactive and isolated may enjoy companionship and activities in a community setting.

Table 8.15 summarizes spending on social services from 1968 to 1979, and gives an analysis of each year's total as a percentage of all social security expenditures, and the percentage increase from the previous year.

8.7 Developments in rehabilitation

The federal government has been involved in various rehabilitation initiatives since World War II, with increasing recognition of the need to integrate the disabled and handicapped into the community and the work force. Concern relates not only to the physically handicapped and persons with chronic illness. Programs are also directed to the rehabilitation of the mentally handicapped, to persons with psychiatric disorders or suffering from addiction to alcohol or drugs and those returning to the community from penal institutions.

In 1979 a bureau of rehabilitation was established in the national health and welfare department to co-ordinate federal activities relating to medical and social rehabilitation. The bureau had major responsibility for developing the federal contribution to the international congress on rehabilitation in Winnipeg in June 1980, referred to in subsection 8.5.3 International welfare.

Most rehabilitation services are jointly developed by the federal and provincial governments, apart from services to Indians and veterans. Over 1,000 sheltered workshops, partially initiated under federal and provincial job creation programs, provide work places for many handicapped persons. Similar employment support is provided through work activity projects initiated by the provinces with federal cost-sharing under CAP. For alcoholics and drug addicts extensive funding has been provided to set up street clinics, detoxification centres and community rehabilitation projects through federal and provincial agencies.

Steps have been taken, in association with the Canadian Association for the Mentally Retarded, to restore mentally handicapped persons to community living and to provide a work environment suited to their capabilities. The federal prosthetic services, operating through a network of centres in the provinces, makes prosthetic and orthotic services available under contract with the provinces and the veterans affairs department.

8.7.1 Vocational rehabilitation

Under provisions of the Vocational Rehabilitation of Disabled Persons (VRDP) Act, the federal government contributes 50% of the costs incurred by a province in providing a program for vocational rehabilitation. Under this act all provinces and territories except Quebec have specific programs for physically or mentally disabled persons to help the individual become capable of pursuing a gainful occupation. A comprehensive program includes medical and social services, vocational assessment, counselling, restoration and placement services, the provision of prostheses, training, maintenance allowances and

tools, books and other equipment. These services are co-ordinated and administered by provincial departments but may be provided either directly by central or regional provincial offices or purchased from voluntary organizations. The disabled client participates in setting an employment objective. The goal may be employment in the competitive labour market, a profession, homemaking, farm work, sheltered employment or homebound work of remunerative nature. Shared costs include the salary and necessary travelling costs of staff whose duties are directly related to this program, and other administrative expenses. Other rehabilitation services provided by agencies and voluntary organizations may be funded by a province and are eligible for 50% reimbursement from the federal government under the Canada Assistance Plan. During the fiscal year 1978-79 the federal government contributed \$31.3 million to the provinces under the act and over 6,000 clients received services.

Prosthetic and corrective appliances, wheelchairs and other mobility aids are provided so that the individual may participate in vocational training or undertake employment. Remedial and restorative treatment is provided as necessary. Vocational training is made available in municipal or provincial vocational schools, private trade schools or business colleges, special training centres such as rehabilitation workshops, universities, or through training on the job. Cost of travel and equipment necessary for training is also covered. Maintenance allowances are usually provided for the individuals and their dependents while participating in the program. Where employment placement outside the competitive labour market is indicated, such placement is arranged by the province. Provincial authorities also assist in regular employment placement when special problems arise and their help is required.

In Quebec, assistance of various types and rehabilitation services for disabled persons are provided through a variety of departments and agencies. Because Quebec does not participate in the VRDP cost-sharing program with the federal government for provision of all these services, the province receives reimbursement under EPF instead of CAP while other costs are borne fully by the province.

Analysis of social security expenditures

8.8

Between 1956-57 and 1978-79 total expenditures on social security increased from \$2.1 billion to \$35.6 billion. Table 8.16 provides details. The external factors were a population growth of 45% and cumulative inflation of 148%. Even after adjusting for these differences, social security expenditures per capita in 1971 constant dollars increased from \$190 to \$844, more than a fourfold increase in real benefits to the average individual. During the same period the real income of the average Canadian almost doubled.

Post-war social security was dominated by programs such as family allowances and old age security, with limited support for the working age population through an unemployment insurance program for low-income workers and unemployment assistance for unemployables. In 1956-57 these programs accounted for over one-half (52.6%) of the total social security expenditures. In 1978-79, the same programs, now universal and with enhanced benefits, accounted for less than one-third (29.9%) of the total of \$35.6 billion.

Three major areas of thrust had accounted for the increased costs:

Social insurance. The need for Canadians to invest in public insurance programs to provide for needs for service and future income requirements grew rapidly in the last quarter century. Developments included hospital insurance for all provinces and territories by 1961, universal medical care insurance by 1971, the Canada and Quebec pension plans, both operational by 1966, and an enlarged universal unemployment insurance plan which came into effect in 1971.

Block funding. During the latter 1960s, Quebec assumed direct control of the financing of its major health and welfare programs through calculated federal contributions rather than through direct sharing of costs. In 1976-77, the federal government ceased direct sharing of costs for all provincial health insurance programs in favour of calculated contributions under block funding under the Established Programs Financing Act.

Tax credits and rebates. It was only in the 1970s that negative income tax became a component of the social security system. Now nearly all provinces are providing tax credit programs and the federal government introduced a child tax credit in 1979.

8.8.1 Elements of change

Developments in programs and new initiatives produced some interim shifts in responsibilities of the federal and provincial governments for social security funding but over the period 1957 to 1979 the relative share of the federal government remained unchanged at 65%. However, on the health side the federal share increased from 20.9% to 49.3%. The provinces and municipalities funded the balance, but the financial role of the municipalities increasingly declined to 1.5% by 1978-79. (See Table 8.18.)

Cost in relation to personal income. Social security expenditures include both cash transfers and transfers in kind (services). They all have an impact on the consumer market in direct cash benefits or payments for health and social services. Over the period 1956-57 to 1978-79 the ratio of social security expenditures to every \$100 of personal income more than doubled from 9.0 to 18.8. For welfare the increase was from 6.9 to 12.0; for health the corresponding rise was from 2.1 to 6.8. In recent years the health ratio has shown little change while the welfare component continued to rise. This reflects some stability in the demand for health services, but on the welfare side the rapid increase in the population of elderly persons may be expected to exert continuing pressures on income maintenance and social services components of social security (Table 8.19).

Provincial differences. The level of total expenditures on social security in each province is affected by its age distribution, labour force involvement, disruptions in employment and regional differences in the cost of living and earnings. Based on total social security expenditures, the Atlantic provinces, Quebec and British Columbia have overall per capita constant dollar expenditures above the national average. In the health field only Quebec, Alberta and British Columbia have per capita expenditures above the national average (Table 8.20).

Recent growth of social security expenditures. The real growth in social security programs may be examined in relation to the growth in the economy, the shifting needs of the population and the capacity of governments at all levels to meet their responsibilities in this field and at the same time to exploit these initiatives to buoy up and maintain the domestic economy through periods of stress. From 1964-65 to 1974-75 the average annual increase in the per capita constant dollar expenditures on social security was 9.6%; during the same period the gross national expenditure in per capita constant dollars increased by about 5%. Since then the average annual increase in per capita constant dollar expenditures on social security has been 4.1%, much closer to the growth rate in the total economy.

Source

8.1 - 8.8 Information Systems Directorate, Policy, Planning and Information Branch, Department of National Health and Welfare.

Tables

not available
... not appropriate or not applicable
— nil or zero
.. too small to be expressed

e estimate
p preliminary
r revised
certain tables may not add due to rounding
n.e.s. not elsewhere specified

8.1 Family allowances, recipients and payments, selected years, 1962-79

Province or territory	Year ¹ and average number of children					
	1962	1967 ^a	1972 ^a	1977	1978	1979
Newfoundland	203,410	210,410	209,510	225,258	222,153	199,575
Prince Edward Island	39,594	39,454	37,541	41,252	40,697	40,089
Nova Scotia	269,030	266,180	254,550	273,968	269,494	264,231
New Brunswick	238,420	231,500	215,590	236,878	234,796	230,304
Quebec	1,959,400	2,038,900	1,893,500	1,943,108	1,899,979	1,851,613
Ontario	2,103,600	2,300,000	2,383,900	2,545,981	2,516,101	2,472,841
Manitoba	312,560	316,940	304,240	323,948	320,071	313,732
Saskatchewan	328,230	331,730	297,990	306,447	304,704	301,048
Alberta	488,430	526,390	545,690	613,141	620,159	623,775
British Columbia	532,020	598,650	645,160	738,549	730,699	723,337
Yukon	16,232	16,878	21,642	7,735	7,632	7,598
Northwest Territories	—	—	—	19,624	19,773	19,724
Canada ^a	6,491,000	6,877,000	6,809,400	7,276,495	7,185,963	7,066,295
Year ¹ and average number of families						
	1962	1967 ^a	1972 ^a	1977	1978	1979
Newfoundland	65,168	70,016	77,669	92,633	94,030	94,862
Prince Edward Island	14,099	14,085	14,700	17,655	18,017	18,283
Nova Scotia	105,450	105,010	111,030	128,354	129,345	130,280
New Brunswick	82,941	82,884	88,522	107,447	109,378	110,464
Quebec	732,240	799,860	848,350	960,609	967,227	967,988
Ontario	922,610	997,840	1,097,500	1,267,954	1,279,997	1,285,184
Manitoba	131,740	131,330	134,460	152,967	153,825	153,616
Saskatchewan	132,090	131,160	124,590	137,961	140,241	141,541
Alberta	202,350	214,770	239,320	291,534	301,504	309,972
British Columbia	235,300	260,310	302,880	370,400	374,461	378,560
Yukon	6,120	6,447	8,802	3,670	3,741	3,825
Northwest Territories	—	—	—	7,661	7,885	8,021
Canada ^a	2,630,100	2,813,700	3,047,900	3,538,845	3,579,655	3,602,600
Year ¹ and federal payments (\$'000)						
	1962	1967 ^a	1972 ^a	1977	1978	1979
Newfoundland	16,337	16,960	16,946	61,090	65,063	63,676
Prince Edward Island	3,205	3,190	3,080	11,190	11,897	11,700
Nova Scotia	21,624	21,508	20,892	74,374	78,974	77,291
New Brunswick	19,223	18,752	17,687	64,391	68,706	67,350
Quebec	157,713	165,096	156,176	526,763	567,165	561,404
Ontario	168,442	185,309	191,377	694,318	740,359	726,706
Manitoba	25,065	25,651	24,748	88,101	93,948	91,948
Saskatchewan	26,313	26,871	24,266	83,404	89,354	88,106
Alberta	38,928	42,564	44,345	167,537	184,138	184,551
British Columbia	42,687	48,526	53,086	201,106	214,697	212,369
Yukon	1,244	1,367	1,804	2,107	2,252	2,244
Northwest Territories	—	—	—	5,389	5,854	5,828
Canada ^a	520,781	555,795	554,407	1,979,770	2,122,409	2,093,020

¹Fiscal year ending March 31.
^aDoes not include youth allowances or Quebec school allowances.
^aIncludes persons who reside outside of Canada.

8.2 Family allowances in Quebec and Alberta, 1979 and 1980 (dollars)

Quebec, monthly payments	Federal rates by year and age group				Provincial supplement	
	Under 12 years		12 to 18 years		Under 18 years	
	1979	1980	1979	1980	1979	1980
1st child	12.00	13.08	17.00	18.53	5.92	6.45
2nd child	18.00	19.62	23.00	25.07	7.92	8.63
3rd child	36.95	40.28	41.95	45.73	9.88	10.77
Each additional child	46.05	50.19	51.05	55.64	11.85	12.92
Alberta, monthly payments by age of child and year, federal rates						
Age	1979	1980	Age	1979	1980	
Under 6 years	15.10	16.50	12-15 years	25.00	27.20	
7-11 years	19.00	20.70	16-17 years	28.00	30.50	

8.3 Child tax credit program, 1979

Province or territory	Families receiving credit	Children claimed for tax	Amount of tax credit \$'000
Newfoundland	81,113	192,853	35,170
Prince Edward Island	15,312	34,310	6,237
Nova Scotia	105,238	227,415	39,768
New Brunswick	89,818	197,944	35,450
Quebec	698,832	1,443,539	248,736
Ontario	830,862	1,745,858	277,129
Manitoba	115,964	262,660	44,937
Saskatchewan	103,179	236,660	40,556
Alberta	184,760	412,331	64,533
British Columbia	233,894	489,278	77,716
Yukon	1,823	3,357	652
Northwest Territories	4,654	13,505	2,327
Canada ¹	2,468,376	5,268,650	874,430

¹Includes persons who reside outside of Canada.8.4 Old age security program (OAS)¹, guaranteed income supplement (GIS) and spouse's allowance (SA) recipients and federal payments

Province or territory	Year ² and OAS ¹ average number of recipients				
	1967	1972	1977	1978	1979
Newfoundland	21,876	32,464	37,129	38,299	39,792
Prince Edward Island	9,086	12,361	13,314	13,631	13,973
Nova Scotia	51,393	72,501	80,522	82,649	85,151
New Brunswick	38,047	54,557	61,045	62,951	64,882
Quebec	253,590	416,690	485,942	500,782	515,761
Ontario	417,800	642,960	728,659	751,895	776,056
Manitoba	67,338	96,409	106,574	109,486	112,197
Saskatchewan	67,905	94,579	102,708	105,131	107,527
Alberta	76,860	118,060	135,355	139,996	144,499
British Columbia	139,100	203,590	235,727	244,078	253,988
Yukon	305	502	576	606	646
Northwest Territories	513	848	1,071	1,124	1,161
Canada	1,143,800	1,745,500	1,988,606	2,050,734	2,115,554
	Year ² and OAS ¹ federal payments (\$'000)				
	1967	1972	1977	1978	1979
Newfoundland	19,707	31,223	61,896	68,588	77,628
Prince Edward Island	8,207	11,926	22,148	24,366	27,253
Nova Scotia	46,533	69,532	134,248	147,800	165,971
New Brunswick	34,358	53,038	103,542	113,111	126,934
Quebec	228,797	398,359	808,042	894,456	999,795
Ontario	377,628	620,867	1,215,438	1,347,094	1,524,814
Manitoba	60,767	92,335	177,809	195,801	218,791
Saskatchewan	61,479	91,905	172,011	187,811	209,510
Alberta	69,525	112,846	226,901	250,156	281,530
British Columbia	125,662	195,971	393,961	436,161	494,766
Yukon	282	480	1,015	1,126	1,272
Northwest Territories	463	813	1,908	2,090	2,350
Canada	1,033,408	1,679,295	3,318,919	3,668,559	4,130,613
	Year ² and GIS average number of recipients				
	1967	1972	1977	1978	1979
Newfoundland	18,037	27,312	30,250	31,221	32,059
Prince Edward Island	6,444	9,469	9,884	9,802	10,094
Nova Scotia	30,613	48,469	53,388	52,671	55,739
New Brunswick	21,937	36,712	39,684	39,981	42,847
Quebec	136,306	254,490	303,101	302,094	320,902
Ontario	128,639	302,720	336,231	320,493	344,896
Manitoba	35,633	56,784	61,658	59,946	62,440
Saskatchewan	33,132	55,905	56,237	55,222	57,890
Alberta	36,526	68,540	77,196	76,029	79,202
British Columbia	57,922	106,190	121,766	119,312	125,422
Yukon	26	306	325	315	352
Northwest Territories	25	732	815	784	909
Canada	505,240	967,620	1,090,534	1,066,793	1,132,757
	Year ² and GIS federal payments (\$'000)				
	1967	1972	1977	1978	1979
Newfoundland	1,520	15,960	30,711	33,369	38,538
Prince Edward Island	522	5,278	9,487	10,079	11,585
Nova Scotia	2,465	27,585	51,461	54,437	62,217
New Brunswick	1,796	20,170	29,434	41,981	48,375
Quebec	10,968	145,392	294,238	313,753	362,404
Ontario	9,761	155,043	299,586	316,398	361,743
Manitoba	2,731	31,158	55,999	58,844	66,722
Saskatchewan	2,546	30,044	51,598	55,221	62,657
Alberta	2,864	37,986	71,789	75,010	85,286
British Columbia	4,422	56,737	111,487	117,050	132,993
Yukon	1	217	361	402	450
Northwest Territories	2	490	977	1,077	1,190
Canada	39,597	526,060	1,017,128	1,077,621	1,234,161

8.4 Old age security program (OAS)¹, guaranteed income supplement (GIS) and spouse's allowance (SA) recipients and federal payments (concluded)

Province or territory	Year ² and SA average number of recipients			
	1976	1977	1978	1979
Newfoundland	2,379	2,849	2,841	2,936
Prince Edward Island	666	696	687	701
Nova Scotia	3,473	4,104	4,097	4,183
New Brunswick	2,086	3,027	3,111	3,214
Quebec	15,905	21,535	22,094	22,560
Ontario	12,434	17,714	17,783	18,340
Manitoba	3,745	4,215	4,262	4,142
Saskatchewan	3,415	3,998	3,980	3,985
Alberta	3,968	5,371	5,378	5,309
British Columbia	6,103	8,215	8,186	8,261
Yukon	3	12	27	13
Northwest Territories	17	45	51	54
Canada	54,194	71,781	72,496	73,696

Province or territory	Year ² and SA federal payments (\$'000)			
	1976	1977	1978	1979
Newfoundland	1,719	5,456	6,156	6,758
Prince Edward Island	529	1,158	1,256	1,395
Nova Scotia	2,637	6,264	5,828	7,591
New Brunswick	1,682	4,397	5,693	6,227
Quebec	10,468	31,898	37,127	40,230
Ontario	6,761	20,614	23,697	27,205
Manitoba	2,460	6,096	6,708	7,071
Saskatchewan	2,313	5,916	6,570	7,015
Alberta	2,373	7,443	8,475	8,977
British Columbia	3,978	11,272	12,422	13,645
Yukon	2	22	33	36
Northwest Territories	14	90	134	150
Canada	34,936	100,626	115,000	126,302

¹Between 1966 and 1970 the eligible age of OAS was reduced from 70 to 65.

²Fiscal year ending March 31.

8.5 Percentage change in expenditures and caseloads, old age security (OAS), guaranteed income supplement (GIS) and spouse's allowance (SA), 1972-79

Year ¹	Change in caseload ²			Increase in expenditures ²		
	OAS	GIS	SA	OAS	GIS	SA
1972	2.56	17.44	—	3.21	87.88	—
1973	2.63	4.99	—	4.98	41.19	—
1974	2.62	4.85	—	27.84	2.32	—
1975	2.71	0.49	—	14.65	10.09	—
1976	2.55	-0.01	—	14.10	10.35	—
1977	2.72	1.93	32.45	11.53	10.15	88.02
1978	3.12	-2.17	0.99	10.53	5.98	14.31
1979	3.16	6.18	1.68	12.59	14.51	9.83

¹Fiscal year ending March 31.

²From the preceding year.

8.6 Federal social assistance payments to registered Indians, 1972-79¹ (thousand dollars)

Province or territory	Social assistance payments							
	1972	1973	1974	1975	1976	1977	1978	1979
Newfoundland	—	—	—	—	—	—	—	—
Prince Edward Island	231	225	256	319	376	410	490	597
Nova Scotia	1,633	1,580	1,790	2,236	2,617	2,849	3,371	4,118
New Brunswick	1,312	1,281	1,458	1,821	2,166	2,340	2,780	3,405
Quebec	3,779	3,497	3,886	5,529	5,567	5,500	5,732	7,099
Ontario	4,132	4,293	4,876	6,702	8,443	8,671	9,345	10,559
Manitoba	7,077	7,793	9,806	12,165	15,642	18,024	20,157	25,275
Saskatchewan	8,514	9,579	10,736	12,139	12,876	15,809	13,333	20,906
Alberta	6,230	7,309	9,006	10,554	12,739	12,578	14,517	15,583
British Columbia	8,884	9,866	10,437	11,929	11,761	11,584	15,146	15,403
Yukon	493	741	698	710	824	195	878	1,104
Northwest Territories	—	—	—	—	—	—	—	—
Canada	42,285	46,164	52,958	64,104	73,023	78,660	85,749	104,048

8.6 Federal social assistance payments to registered Indians, 1972-79¹ (thousand dollars) (concluded)

Province or territory	Payments for social services							
	1972	1973	1974	1975	1976	1977	1978	1979
Newfoundland	—	—	—	—	58	70	77	169
Prince Edward Island	32	32	30	47	384	452	472	1,163
Nova Scotia	223	224	209	336	312	350	385	961
New Brunswick	179	181	170	273	843	1,312	1,475	3,558
Quebec	578	579	1,001	897	3,213	4,195	4,253	6,614
Ontario	1,821	1,796	2,223	2,849	3,042	3,165	3,191	5,371
Manitoba	1,570	1,573	2,118	2,465	1,988	2,179	2,385	4,088
Saskatchewan	1,204	1,268	1,188	1,630	3,615	4,094	4,927	6,827
Alberta	1,355	1,915	2,866	2,763	4,314	6,263	6,491	10,953
British Columbia	3,606	5,184	4,247	4,708	706	704	835	795
Yukon	376	436	493	625	—	—	—	—
Northwest Territories	—	—	—	—	—	—	—	—
Canada	10,944	13,188	14,545	16,595	18,475	22,784	24,491	40,498

¹Fiscal years ending March 31.

8.7 War veterans allowances and pensions, 1972-79

Provinces	Recipients of allowances							
	1972	1973	1974	1975	1976	1977	1978	1979
Newfoundland	4,088	4,281	4,685	4,877	4,947	5,157	5,389	5,453
Prince Edward Island	1,069	1,076	1,195	1,268	1,366	1,403	1,483	1,479
Nova Scotia	7,004	7,078	7,716	7,883	8,248	8,436	8,766	8,830
New Brunswick	4,795	4,911	5,203	5,419	5,640	5,942	6,192	6,230
Quebec	9,433	9,353	10,203	10,618	10,877	11,313	11,505	11,422
Ontario	26,123	25,978	28,418	29,156	29,649	30,466	31,389	31,098
Manitoba	4,747	4,796	5,184	5,294	5,320	5,578	5,643	5,662
Saskatchewan	2,970	2,955	3,301	3,356	3,496	3,666	3,831	3,807
Alberta	5,137	5,071	5,625	5,855	6,005	6,078	6,201	6,112
British Columbia	12,460	12,333	13,063	13,108	13,128	13,713	13,997	13,666
Canada ¹	78,514	78,484	85,238	87,501	89,371	92,498	95,221	94,662

	Payments (\$'000)							
	1972	1973	1974	1975	1976	1977	1978	1979
Newfoundland	5,270	6,006	7,804	9,650	11,982	12,750	14,255	15,377
Prince Edward Island	1,382	1,521	2,010	2,647	3,460	3,864	4,320	4,731
Nova Scotia	8,898	9,755	12,404	15,543	19,431	21,057	23,542	25,786
New Brunswick	6,330	6,955	8,824	11,554	14,418	16,421	18,142	19,872
Quebec	10,076	11,036	14,259	18,403	22,165	24,921	27,213	30,044
Ontario	22,592	25,870	33,752	43,217	52,187	58,149	65,658	72,154
Manitoba	3,769	4,370	5,605	6,923	8,402	9,852	10,799	12,065
Saskatchewan	2,840	3,217	4,232	5,403	6,625	7,534	8,639	9,462
Alberta	4,797	5,327	7,060	9,098	11,085	12,171	13,606	14,667
British Columbia	10,374	11,707	14,795	18,032	21,330	24,535	27,430	29,571
Canada ¹	77,220	86,664	111,765	141,781	172,702	193,185	215,979	236,567

	Payments, veteran disability and dependent pensioners (\$'000)							
	1972	1973	1974	1975	1976	1977	1978	1979
Newfoundland	2,808	3,020	3,724	4,281	4,535	5,058	5,249	6,171
Prince Edward Island	2,648	2,812	3,485	4,051	4,326	4,792	5,095	5,552
Nova Scotia	14,877	15,635	19,118	22,271	23,339	26,078	27,557	30,057
New Brunswick	9,220	9,731	11,796	13,676	14,424	16,142	16,876	18,351
Quebec	24,753	25,639	31,003	35,612	37,322	41,827	43,560	47,110
Ontario	78,547	81,460	97,985	111,595	115,934	128,423	135,606	147,009
Manitoba	17,627	18,401	22,081	25,538	26,661	29,981	31,520	33,883
Saskatchewan	9,432	9,881	11,937	13,630	14,230	15,647	16,493	17,731
Alberta	15,763	16,441	19,949	23,063	24,412	27,102	28,464	30,838
British Columbia	37,643	39,545	48,092	55,075	57,345	63,038	66,141	72,311
Canada ¹	231,377	241,005	290,526	332,568	346,554	383,707	403,236	436,576

¹Includes persons who reside in the territories and outside Canada.8.8 Analysis of federal expenditures on income security programs¹, selected years, 1961-79

Year ^a	Expenditures \$'000,000	% of total social security expenditures	Per capita \$	Per capita increase from previous year %
1961	1,308	38.7	71	2.7
1966	1,828	38.6	91	4.4
1967	2,047	38.1	100	11.9
1968	2,393	36.1	115	16.9
1971	3,038	30.0	140	6.8
1972	3,363	28.4	154	10.7
1973	3,728	26.7	168	10.9

8.8 Analysis of federal expenditures on income security programs¹, selected years, 1961-79 (concluded)

Year*	Expenditures \$'000,000	% of total social security expenditures	Per capita \$	Per capita increase from previous year %
1974	4,692	28.7	212	25.9
1975	5,993	28.5	266	27.8
1976	6,719	27.2	294	12.1
1977	7,335	26.6	317	9.2
1978	7,956	25.3	340	8.5
1979	8,458	23.7	359	6.3

¹Includes family allowances, old age security (OAS, GIS and SA), manpower training, assistance to Indians and veterans benefits.

*Fiscal year ending March 31.

8.9 Direct financial assistance paid under the Canada Assistance Plan (CAP), 1972-79

Province or territory	Recipients, including dependents							
	1972	1973	1974	1975	1976	1977	1978	1979
Newfoundland	80,574	70,912	63,250	63,127	61,009	52,424	54,500	39,312
Prince Edward Island	15,913	7,238	7,291	8,401	8,812	8,685	8,330	8,480
Nova Scotia	52,278	52,864	47,597	52,358	54,160	55,932	55,010	50,055
New Brunswick	61,717	58,575	51,879	55,604	52,521	67,130	68,430	65,040
Quebec	462,571	406,452	395,820	416,558	428,713	457,053	485,900	478,277
Ontario	333,584	307,880	317,283	336,415	367,943	338,909	356,320	382,224
Manitoba	78,544	70,427	60,681	56,616	57,574	55,251	58,680	47,594
Saskatchewan	69,604	56,728	44,405	45,332	43,490	38,807	41,360	42,130
Alberta	88,983	85,456	80,609	77,970	78,220	86,464	85,060	80,823
British Columbia	134,198	103,989	137,192	162,349	162,076	162,000	133,000	146,940
Yukon	1,291	892	2,622	5,711	8,400	5,329	5,640	6,303
Northwest Territories	—	—	—	—	—	—	—	—
Canada	1,379,257	1,221,413	1,208,629	1,280,441	1,322,918	1,327,984	1,352,230	1,347,178
Payments (federal-provincial cost-shared) \$'000								
	1972	1973	1974	1975	1976	1977	1978	1979
Newfoundland	41,090	40,024	33,526	45,846	47,080	49,750	49,982	53,748
Prince Edward Island	3,404	3,758	3,868	5,722	6,274	8,390	9,380	11,222
Nova Scotia	27,454	27,686	35,608	39,798	48,158	54,702	61,386	65,742
New Brunswick	28,988	34,756	42,656	55,644	78,836	106,036	79,716	104,788
Quebec	336,540	367,380	368,908	427,826	520,708	625,524	703,566	780,316
Ontario	296,398	280,468	311,242	411,706	483,790	494,906	557,098	605,934
Manitoba	47,280	45,668	42,732	46,524	51,170	52,894	56,100	62,160
Saskatchewan	36,790	40,202	47,696	42,106	44,024	70,256	64,924	76,030
Alberta	65,980	80,336	77,004	88,856	105,250	130,348	146,840	152,508
British Columbia	103,092	106,564	115,242	203,878	215,802	211,972	246,698	260,242
Yukon	132	364	430	482	306	482	778	888
Northwest Territories	—	—	474	6,462	4,032	3,104	3,650	5,418
Canada	987,148	1,027,206	1,079,386	1,374,850	1,605,430	1,808,314	1,984,118	2,178,996

8.10 Analysis of federal-provincial social assistance programs, cost-shared under the Canada Assistance Plan, selected years, 1961-79

Year ¹	Expenditures \$'000,000	% of total social security expenditures	Per capita \$	Per capita increase from previous year %
1961	222	6.6	11	—
1966	348	7.3	17	56.8
1967	429	8.0	21	23.3
1968	603	9.1	29	40.6
1971	836	8.2	39	38.6
1972	1,002	8.5	46	19.9
1973	1,041	7.5	48	3.4
1974	1,089	6.6	49	4.6
1975	1,381	6.6	61	26.8
1976	1,610	6.5	71	16.6
1977	1,810	6.6	78	12.4
1978	1,985	6.3	85	10.2
1979	2,179	6.1	93	9.8

¹Fiscal year ending March 31.

8.11 Income insurance under the Canada Pension Plan and Quebec Pension Plan, 1970-79

Year ¹	Retirement pensions \$'000,000	Disability and survivors benefits \$'000,000	Total CPP QPP \$'000,000	% of total social security expenditures	Per capita \$	Per capita increase %	Total beneficiaries CPP/QPP pensions '000	Increase in beneficiaries %
1970	23	41	64	0.7	3	—	195.3	145.0
1971	53	69	122	1.2	6	90.6	317.2	62.4
1972	84	110	194	1.6	9	59.0	435.8	37.3
1973	114	166	280	2.0	13	44.3	530.8	21.8
1974	157	225	382	2.3	17	36.4	676.2	27.4
1975	225	298	523	2.5	23	36.9	807.9	18.7
1976	392	399	791	3.2	35	51.2	1,058.4	31.8
1977	596	513	1,109	4.0	48	40.2	1,150.8	8.7
1978	816	618	1,434	4.6	61	29.3	1,308.6	13.7
1979	1,055	746	1,801	5.1	76	25.6	1,429.8 ^a	9.3

¹Fiscal year ending March 31.^aMarch 1979.**8.12 Federal and provincial expenditures on income insurance (CPP, QPP, all programs of UIC and worker compensation), 1971-79**

Year ¹	Expenditures \$'000,000	% of total social security expenditures	Per capita \$	Increase from previous year %
1971	1,242	12.2	58	28.8
1972	2,303	19.5	106	85.4
1973	2,565	18.4	117	11.4
1974	2,833	17.3	128	9.4
1975	4,086	19.5	182	42.2
1976	4,671	18.9	205	14.3
1977	5,213	18.9	226	11.6
1978	6,264	19.9	268	20.2
1979	7,043	19.8	299	12.4

¹Fiscal year ending March 31.**8.13 Provincial tax credits programs, estimated expenditures (million dollars)**

Province	Program	Population covered	Year ¹	Estimated expenditures
New Brunswick	Rental assistance	Senior citizens	1978-79	4.0
Quebec	Property tax credit	Property tax filers	1979-80	80.0
Ontario	School tax rebate	Senior citizens	1978-79	16.0
	Property tax credit	Property tax filers	1978-79	485.0
Manitoba	Pensioner tax credit	Senior citizens	1978-79	137.0
	Cost of living credit	Income tax filers		
	Property tax credit	Income tax filers		
Saskatchewan	Elderly renter's assistance	Senior citizens	1979-80	7.0
	Property improvement rebate	Property tax filers	1978-79	52.0
	Rental and school tax rebate	Renters and tax filers	1978-79	22.0
	Mortgage interest tax credit	Property tax filers	1979-80	18.0
Alberta	Shelter assistance	Senior citizens	1979-80	13.5
	Renter's assistance tax credit	Property tax filers	1978-79	22.8
British Columbia	Provincial home-owners grant	Property tax	1978-79	17.0
	Shelter assistance for elderly residents	Senior citizens	1978-79	7.8
	Renter tax credit	Property tax filers	1978-79	16.1
	Property tax relief	Property tax filers	1978-79	150.0

¹When 1979-80 is cited, it is the first year of a new program.

8.14 Provincial welfare programs not cost-shared with the federal government, selected years, 1961-79

Year	Expenditures \$'000,000	% of total social security expenditures ¹	Per capita \$	Per capita increase from previous year %
1961	214	4.9	11	15.3
1966	317	6.7	15	48.2
1967	266	4.9	13	-16.1
1968	281	4.2	13	5.5
1971	245	2.4	11	-12.6
1972	268	2.3	12	9.0
1973	407	2.9	19	52.1
1974	966	5.9	40	137.3
1975	1,254	5.9	52	29.8
1976	1,351	5.4	55	7.9
1977	1,593	5.7	60	17.9
1978	2,089	6.6	87	31.1
1979	2,547 ^a	7.2	108	21.9

¹Expenditures on social security by all levels of government.^aBased on estimates by provinces.

8.15 Social services programs,¹ federal and federal-provincial expenditures (thousand dollars), percentage of total social security and change from previous year, 1968-79

Year	Province or territory							Sask.
	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	
1968	3,416	2,091	8,256	5,640	82,407	72,290	9,441	6,557
1969	3,717	2,245	8,734	5,910	89,319	79,594	10,277	8,016
1970	5,074	3,684	11,956	7,706	110,875	86,407	10,145	13,481
1971	5,764	4,115	13,430	6,215	154,407	124,723	14,168	11,654
1972	7,680	4,680	16,431	10,095	205,048	132,525	24,994	13,284
1973	9,638	5,008	16,878	9,765	219,509	148,216	26,489	17,510
1974	13,804	6,412	19,647	15,752	269,093	116,097	33,710	22,248
1975	16,450	8,355	23,232	13,617	342,951	145,125	33,703	27,298
1976	22,844	10,078	34,924	19,692	442,093	295,167	46,498	42,698
1977	27,246	13,093	41,206	29,170	578,878	343,653	56,040	60,793
1978	27,256	5,439	35,238	21,923	448,701	256,301	56,250	51,465
1979	21,803	8,073	31,451	18,124	520,464	258,828	60,250	46,283
	Alta.	BC	Yukon	NWT	Canada	Part of total social security %	Increase from previous year %	
1968	12,551	19,443	482	—	222,572	3.4	—	
1969	13,995	22,282	500	—	244,569	3.2	9.9	
1970	14,880	25,008	—	—	289,214	3.4	18.3	
1971	18,500	37,749	1,180	—	391,905	3.9	35.5	
1972	21,113	31,390	562	—	467,812	4.0	19.4	
1973	28,365	33,026	1,360	—	515,764	3.7	10.3	
1974	32,940	49,737	1,629	2,226	583,295	3.6	13.1	
1975	40,113	74,226	1,623	5,598	732,293	3.5	25.5	
1976	85,973	152,574	3,398	2,717	1,158,657	4.7	58.2	
1977	97,542	145,875	2,037	3,946	1,401,066	5.1	20.9	
1978	89,981	145,189	1,905	6,274	1,145,931	3.6	-18.2	
1979	102,354	145,556	2,288	10,603	1,225,257	3.4	6.9	

¹CAP homes for special care, social services for registered Indians, vocational rehabilitation of disabled persons and other welfare services.

8.16 Social security expenditures¹ by program, 1957-79 (thousand dollars)

Program	1957	1958	1959	1960	1961	1962	1963	1964
Family allowances	397,518	437,887	474,787	491,214	506,192	520,781	531,566	538,312
Youth allowances and Quebec schooling allowances	—	—	—	—	—	—	—	—
Child tax credits	—	—	—	—	—	—	—	—
Old age security	379,111	473,859	559,280	574,887	592,413	625,108	734,382	808,391
Guaranteed income supplement	—	—	—	—	—	—	—	—
Spouses allowances	—	—	—	—	—	—	—	—
Canada manpower institutional training allowances	—	—	—	—	—	—	—	—
Canada manpower industrial training	—	—	—	—	—	—	—	—
Registered Indians, social assistance	—	—	—	—	—	—	—	—
War veterans allowances	40,975	47,990	54,871	57,304	58,428	75,290	81,782	83,207
Veteran disability and dependent pensioners	130,326	145,603	150,745	149,678	150,717	177,893	175,926	173,190
CPP and OPP, retirement beneficiaries	—	—	—	—	—	—	—	—
CPP and OPP, surviving spouse pensioners	—	—	—	—	—	—	—	—
CPP and OPP, disability pensioners	—	—	—	—	—	—	—	—
CPP and OPP, orphans and dependent children of disabled pensioners	—	—	—	—	—	—	—	—
UIC, unemployment beneficiaries	305,076	492,901	406,097	481,837	493,971	409,208	394,163	344,390
UIC, sickness benefits	—	—	—	—	—	—	—	—
UIC, maternity benefits	—	—	—	—	—	—	—	—
UIC, retirement benefits	—	—	—	—	—	—	—	—
UIC, fishing benefits	—	—	—	—	—	—	—	—
UIC, persons in manpower training	—	—	—	—	—	—	—	—
Worker compensation, temporary disability	—	—	—	—	36,406	39,247	45,967	47,537
Worker compensation, pensions for permanent disability and survivors	76,632	80,028	85,235	91,616	55,210	54,001	57,016	60,555
Old age pensions ²	—	—	—	—	—	—	—	—
Old age assistance ³	40,798	49,922	60,414	60,696	61,314	61,622	76,358	78,416
Blind persons allowances ³	5,919	7,131	8,470	8,396	5,507	5,507	6,509	6,651
Disabled persons allowances ²	14,335	22,183	30,661	32,102	32,772	32,867	39,269	40,413
Unemployment assistance ²	11,524	21,626	61,696	76,404	119,216	175,798	192,948	214,740
CAP, direct financial assistance ⁴	—	—	—	—	—	—	—	—
CAP, homes for special care ³	—	—	—	—	—	—	—	—
CAP, child welfare ³	—	—	—	—	—	—	—	—
CAP, other welfare services and work activity ³	—	—	—	—	—	—	—	—
Vocational rehabilitation of disabled persons ³	—	—	—	—	—	—	668	1,034
Registered Indians, social services	—	—	—	—	—	—	—	—
Mothers allowances, provincial-municipal cost-shared	24,146	33,237	41,477	44,885	46,245	48,105	50,642	55,426
Provincial tax credits and rebates	—	—	—	—	—	—	—	—
Other provincial welfare programs	153,766	173,876	141,933	101,000	121,947	115,901	107,649	120,337
Hospital insurance and diagnostic services	—	27,650	64,060	157,890	206,780	294,740	337,200	384,070
Hospital insurance and diagnostic services, provincial costs	—	27,060	63,700	161,060	247,120	310,380	348,920	388,780
Medical care insurance	—	—	—	—	—	—	—	—
Medical care insurance, provincial costs	—	—	—	—	—	—	—	—

Extended health care, EPF:
Other health programs. (Including cost-
shared health expenses under CAP)

	1965	1966	1967	1968	1969	1970	1971	1972
Worker compensation, hospital and medical care (provincial compensation)	105,440	101,850	111,690	98,980	102,620	101,000	107,170	111,770
Other hospital care, provincial	26,170	29,580	32,030	33,740	32,351	34,456	36,992	41,536
Other provincial health	264,580	241,171	234,923	262,516	234,227	255,542	270,497	236,542
Net provincial welfare	37,453	65,667	70,052	79,080	86,672	95,984	96,463	137,598
Net municipal health	33,970	31,450	34,740	37,360	42,270	42,570	43,530	46,450
Total, expenditures	2,117,979	2,591,771	2,761,791	3,068,995	3,297,918	3,543,062	3,809,317	3,974,175
	1965	1966	1967	1968	1969	1970	1971	1972
Family allowances	545,775	551,735	555,795	558,774	560,186	560,050	557,878	554,407
Youth allowances and Quebec schooling allowances	36,411	63,975	66,033	68,927	73,257	76,502	80,420	82,654
Child tax credits	885,294	927,299	1,033,408	1,153,284	1,296,849	1,467,057	1,627,219	1,679,295
Old age security	—	—	39,597	234,835	244,470	263,479	280,005	526,060
Guaranteed income supplement	—	—	—	—	—	—	—	—
Spouses allowances	—	—	—	—	—	—	—	—
Canada manpower institutional training allowances	—	—	52,344	55,878	108,300	131,150	156,563	161,333
Canada manpower industrial training	—	—	—	—	—	—	—	7,993
Registered Indians, social assistance	92,846	99,902	103,629	17,725	21,808	24,776	34,509	42,285
War veterans allowances	180,327	185,560	195,910	98,401	95,500	92,038	88,912	77,220
Veteran disability and dependent pensioners	—	—	91	205,599	223,321	218,554	212,922	231,377
CPP and QPP, retirement beneficiaries	—	—	—	1,400	6,987	22,987	52,838	83,228
CPP and QPP, surviving spouse pensioners	—	—	—	—	20,092	30,092	46,186	62,732
CPP and QPP, disability pensioners	—	—	—	—	—	16	3,884	19,148
CPP and QPP, orphans and dependent children of disabled pensioners	—	—	—	—	2,874	10,118	18,104	27,666
UIC: unemployment beneficiaries	312,110	295,301	352,645	438,128	498,992	695,222	890,594	1,764,167
UIC: sickness benefits	—	—	—	—	—	—	—	18,402
UIC: maternity benefits	—	—	—	—	—	—	—	14,118
UIC: retirement benefits	—	—	—	—	—	—	—	1,896
UIC: fishing benefits	—	—	—	—	—	—	—	16,099
UIC: persons in manpower training	—	—	—	—	—	—	—	—
Worker compensation, temporary disability	46,899	51,942	62,659	62,762	69,346	85,878	96,714	90,990
Worker compensation, pensions for permanent disability and survivors	69,807	79,158	92,171	96,339	102,864	120,443	134,192	148,389
Old age pensions ^a	90,018	85,842	63,980	36,000	13,282	1,688	—	—
Blind persons allowances ^a	5,929	7,601	7,089	5,498	4,986	4,736	3,901	2,730
Disabled persons allowances ^a	46,731	47,602	47,124	30,713	28,680	23,790	19,418	8,580
Unemployment assistance ^a	215,106	203,414	286,542	88,140	33,364	29,280	28,258	2,148
CAP: direct financial assistance ^a	—	—	20,992	440,054	521,900	580,270	782,132	987,148
CAP: homes for special care ^a	—	—	—	81,300	91,364	92,952	207,020	265,172

8.16 Social security expenditures¹ by program, 1957-79 (thousand dollars) (concluded)

Program	1965	1966	1967	1968	1969	1970	1971	1972
CAP, child welfare ^a	—	—	—	76,200	78,084	114,508	80,668	82,470
CAP, other welfare services and work activity ^a	—	—	—	54,000	59,784	62,710	80,788	96,226
Vocational rehabilitation of disabled persons ^a	1,284	1,688	2,050	4,900	7,800	10,026	10,518	13,000
Registered Indians, social services	—	—	—	6,172	7,537	9,018	12,911	10,944
Mothers allowances, provincial-municipal cost-shared	56,074	61,776	—	—	—	—	—	—
Provincial tax credits and rebates	153,850	209,279	266,088	280,867	457,039	277,653	245,463	267,563
Other provincial welfare programs	434,280	497,200	580,950	681,110	811,640	928,090	1,059,590	1,208,510
Hospital insurance and diagnostic services	436,860	497,020	581,540	682,700	814,000	930,550	1,059,470	1,199,420
Hospital insurance and diagnostic services, provincial costs	—	—	—	—	—	201,470	424,210	586,240
Medical care insurance	—	—	—	—	—	196,850	428,700	586,110
Extended health care, provincial costs	—	—	—	—	—	—	—	—
Other health programs, (including cost-shared health expenses under CAP)	—	—	—	—	—	—	—	—
Worker compensation, hospital and medical care (provincial compensation)	117,580	125,480	146,650	184,130	227,870	155,800	209,860	217,450
Other hospital care, provincial	47,118	52,702	56,287	61,049	65,496	68,159	76,805	79,612
Other provincial health	310,274	347,099	402,983	475,346	450,731	482,891	529,157	551,756
Net municipal welfare	135,696	145,181	226,017	301,234	426,409	443,019	379,046	388,903
Net municipal health	50,230	56,220	59,010	61,940	84,380	87,960	120,000	132,750
Net municipal health	57,940	73,400	68,740	76,220	94,870	101,680	104,050	68,060
Total expenditures	4,328,439	4,666,376	5,370,324	6,619,832	7,604,252	8,601,462	10,142,905	12,364,251
	1973	1974	1975	1976	1977	1978	1979	
Family allowances	548,623	946,246	1,824,082	1,957,500	1,979,770	2,122,409	2,093,020	
Youth allowances and Quebec schooling allowances	82,790	65,418	—	—	—	—	—	874,430
Child tax credits	—	2,274,424	2,607,724	2,975,562	3,318,919	3,668,559	4,130,613	
Old age security	1,781,532	—	836,750	923,413	1,017,128	1,077,621	1,234,161	
Guaranteed income supplement	742,813	760,068	—	34,936	100,626	115,000	126,302	
Spouses allowances	—	—	—	—	—	—	—	
Canada manpower institutional training allowances	146,167	147,735	148,715	186,272	200,158	190,791	116,993	
Canada manpower industrial training	51,750	42,604	37,288	48,706	59,511	76,721	83,697	
Registered Indians, social assistance	46,164	52,958	64,104	73,023	78,660	85,749	104,048	
War veterans allowances	86,664	111,765	141,781	172,702	215,979	236,367	236,367	
Veteran disability and dependent pensioners	241,005	290,526	332,568	346,554	383,707	403,236	436,576	
GPP and OPP, retirement beneficiaries	113,906	161,723	241,045	390,980	606,518	816,286	1,054,867	
GPP and OPP, surviving spouse pensioners	87,127	120,373	158,544	226,344	276,835	335,608	408,040	
GPP and OPP, disability pensioners	35,866	56,699	78,248	110,418	149,858	183,996	228,551	
GPP and OPP, orphans and dependent children of disabled pensioners	36,413	45,720	57,231	72,208	87,210	97,915	109,068	
UIC, unemployment beneficiaries	1,850,157	1,924,739	2,892,489	3,002,349	3,108,299	3,697,672	3,917,067	

UIC, sickness benefits	66,738	84,181	102,348	113,436	141,061	156,358	155,571
UIC, maternity benefits	44,979	69,772	86,440	108,967	177,213	177,213	199,361
UIC, retirement benefits	2,751	3,793	4,575	10,996	14,879	13,897	15,008
UIC, fishing benefits	20,808	21,459	23,285	23,897	38,657	53,575	68,819
UIC, persons in manpower training	—	—	—	17,431	27,003	50,000	118,362
Worker compensation, temporary disability	103,723	119,660	151,321	182,775	200,333	230,220	274,367
Worker compensation, pensions for permanent disability and survivors	177,845	209,565	264,007	337,241	411,416	453,538	494,008
Old age pensions ^a	—	—	—	—	—	—	—
Old age assistance ^a	—	—	—	—	—	—	—
Blind persons allowances ^a	2,348	1,852	1,432	1,101	810	737	767
Disabled persons allowances ^a	7,388	5,378	3,483	2,404	1,164	736	1,041
Unemployment assistance ^a	2,676	1,288	126	1,283	126	—	—
CAP direct financial assistance ^a	1,027,206	1,079,386	1,374,850	1,605,430	1,808,314	1,984,118	2,178,996
CAP, homes for special care ^a	283,276	277,200	364,098	668,104	842,528	518,588	493,045
CAP, child welfare ^a	89,430	112,400	124,462	124,850	135,234	151,514	164,862
CAP, other welfare services and work activity ^a	114,970	159,164	203,138	306,006	353,400	406,848	462,230
Vocational rehabilitation of disabled persons ^a	14,900	19,986	24,000	41,222	47,120	44,490	62,621
Registered Indians, social services	13,188	14,345	16,595	18,475	22,784	24,491	40,498
Mothers allowances, provincial-municipal cost-shared	—	—	—	—	—	—	—
Provincial tax credits and rebates	406,851	402,386	609,176	648,609	823,838	886,618	964,836
Other provincial welfare programs	—	563,745	644,864	701,934	768,880	1,202,310	1,582,256
Hospital insurance and diagnostic services	1,342,940	1,554,800	1,930,640	2,365,040	2,713,410	3,368,848	3,858,243
Hospital insurance and diagnostic services, provincial costs	1,334,020	1,544,360	1,917,260	2,311,232	2,847,141	2,692,410	2,631,620
Medical care insurance	640,180	686,310	731,530	838,900	955,730	1,156,800	1,324,849
Extended health care, EPF	640,190	686,430	731,530	838,867	917,279	866,018	924,972
Other health programs, (including cost-shared health expenses under CAP)	—	—	—	—	—	465,154	520,909
Worker compensation, hospital and medical care (provincial compensation)	250,920	295,350	353,670	389,800	423,710	539,189	632,520
Other hospital care, provincial	86,115	96,939	106,070	137,275	163,769	173,544	198,281
Other provincial health	718,643	726,246	864,395	1,130,150	1,127,232	867,292	835,348
Net municipal welfare	413,774	472,546	734,430	921,038	968,532	1,373,182	1,710,454
Net provincial welfare	161,200	136,290	187,050	245,500	253,460	308,319	339,045
Net municipal health	112,220	93,350	99,240	128,220	173,850	191,602	210,346
Total, expenditures	13,930,456	16,442,159	21,074,584	24,941,150	27,892,086	31,447,081	35,619,436

^aFederal payments, unless otherwise noted.^{a*}Federal-provincial cost-shared.

8.17 Social security expenditures, all government levels, with indexes of social security expenditures, 1959-79

Year ¹	Million dollars				Indexes per \$100			Per capita current dollars
	Social security expenditures	Gross national product	Net national income	Total government expenditures	Gross national product	Net national income	Total government expenditures	
1959	2,762	35,368	26,833	9,986	7.81	10.29	27.66	160.34
1960	3,069	37,452	28,137	10,860	8.19	10.91	28.26	174.14
1961	3,298	38,290	28,692	11,966	8.61	11.49	27.56	183.13
1962	3,543	40,644	30,677	13,554	8.72	11.55	26.14	192.95
1963	3,809	43,521	32,798	14,513	8.75	11.61	26.25	203.62
1964	3,974	47,068	35,503	15,440	8.44	11.19	25.74	208.50
1965	4,328	51,377	38,423	16,888	8.42	11.27	22.89	222.89
1966	4,666	57,061	42,553	18,705	8.18	10.97	24.95	235.95
1967	5,370	62,975	47,072	21,810	8.53	11.41	26.57	266.57
1968	6,620	74,614	50,703	25,260	9.79	13.06	24.62	322.78
1969	7,604	81,369	56,327	28,847	10.19	13.50	26.21	365.34
1970	8,601	87,166	61,642	32,676	10.57	13.95	26.32	407.44
1971	10,143	97,129	65,081	38,005	11.64	15.59	26.69	473.97
1972	12,364	109,251	73,015	43,190	12.73	16.93	28.63	570.91
1973	13,930	129,364	83,034	48,683	12.75	16.78	28.61	636.62
1974	16,442	151,880	99,036	55,463	12.71	16.60	29.65	742.38
1975	21,075	171,831	117,047	69,603	13.88	18.01	30.28	933.02
1976	24,941	195,834	134,699	84,098	14.51	18.52	29.66	1,093.14
1977	27,892	214,261	151,971	95,906	14.24	18.35	29.08	1,207.15
1978	31,447	236,074	165,771	107,284	14.68	18.97	29.31	1,447.17
1979	35,619		184,358	118,434	15.09	19.32	30.08	1,519.73

¹Fiscal year ending March 31.

8.18 Social security expenditures and percent by level of government, welfare, health, total, selected years, 1957-79 (million dollars)

Year ¹	Welfare expenditures			Health expenditures			Total social security expenditures			
	All levels	Federal	Provincial	All levels	Federal	Provincial	All levels	Federal	Provincial	Municipal
1957	1,614	1,273	307	503	105	328	2,118	1,378	635	104
1962	2,383	1,927	414	1,159	396	696	3,543	2,323	1,111	109
1967	3,307	2,515	673	2,063	728	1,266	5,370	3,303	1,939	128
1972	7,478	6,004	1,341	4,886	2,012	2,864	12,364	8,016	4,146	201
1977	17,601	13,111	4,236	10,291	4,093	6,023	27,892	17,204	10,260	427
1978	19,753	14,561	4,883	11,694	5,530	5,972	31,447	20,091	10,855	499
1979	22,772	16,765	5,668	12,847	6,336	6,300	35,619	23,101	11,968	549

8.18 Social security expenditures and percent by level of government, welfare, health, total, selected years, 1957-79 (million dollars) (concluded)

Year ^a	Welfare — percent distribution			Health — percent distribution			Total social security — percent distribution		
	All levels	Federal	Provincial	All levels	Federal	Provincial	All levels	Federal	Provincial
1957	100.0	78.9	19.0	100.0	20.9	65.2	100.0	65.1	30.0
1962	100.0	80.9	17.4	100.0	34.2	60.0	100.0	65.6	31.3
1967	100.0	77.9	20.3	100.0	35.3	61.4	100.0	61.5	36.1
1972	100.0	80.3	17.9	100.0	41.2	57.4	100.0	64.9	33.5
1977	100.0	74.5	24.1	100.0	39.8	58.5	100.0	61.7	32.8
1978	100.0	73.7	24.7	100.0	47.3	51.1	100.0	63.9	34.5
1979	100.0	73.6	24.9	100.0	49.3	49.0	100.0	64.9	33.6

^aFiscal year ending March 31.

8.19 Indexes of welfare, health and total social security, all levels of government, fiscal years nearest to census years, 1957-77, 1978 and 1979

Year ^a	Per capita expenditures in constant (1971) dollars			Annual increase in per capita constant (1971) dollars			Ratio of expenditures per \$100 of personal income		
	Welfare	Health	Total social security	Welfare	Health	Total social security	Welfare	Health	Total social security
1957	145	45	100	8.3	8.3	8.3	6.9	2.1	9.0
1962	174	85	259	0.5	16.4	5.2	7.9	3.9	11.8
1967	195	121	316	6.3	11.7	8.3	7.2	4.5	11.7
1972	342	223	565	21.0	8.7	15.8	10.1	6.6	16.7
1977	502	294	796	4.4	3.3	4.0	11.3	6.6	17.9
1978	513	304	816	2.1	3.4	2.6	11.5	6.8	18.4
1979	539	304	844	5.2	0.2	3.3	12.0	6.8	18.8

^aFiscal year ending March 31.

8.20 Analysis of social security expenditures, all levels of government, by province, 1972, 1977 and 1979

Year	Sector	Total expenditures, current (million dollars)									
		Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	Canada
1972	Welfare	206	48	297	243	2,138	2,492	345	303	495	882
	Health	89	19	155	115	1,356	1,905	216	186	395	439
	Total social security	296	67	453	358	3,494	4,397	561	489	890	1,322
1977	Welfare	491	118	676	625	4,895	5,901	800	653	1,097	2,261
	Health	223	39	321	246	2,908	3,703	461	376	871	1,110
	Total social security	714	157	998	871	7,803	9,604	1,261	1,029	1,968	3,370
1979	Welfare	644	151	881	794	6,386	7,661	1,021	886	1,567	2,693
	Health	265	54	401	307	3,644	4,378	508	513	1,180	1,554
	Total social security	909	205	1,282	1,100	10,030	12,039	1,529	1,400	2,748	4,248

35,619

8.20 Analysis of social security expenditures, all levels of government, by province, 1972, 1977 and 1979 (concluded)

Year	Sector	Per capita expenditures, constant (1971) dollars											
		Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	Yukon	NWT
1972	Welfare	388	427	372	377	350	318	345	325	298	396	290	107
	Health	168	168	194	179	222	243	216	200	238	197	104	213
	Total social security	556	595	566	556	572	562	561	525	537	593	394	320
1977	Welfare	577	652	535	604	516	469	515	464	389	602	575	325
	Health	262	216	254	238	306	294	297	267	308	295	303	374
	Total social security	839	868	790	842	822	763	812	731	697	897	878	700
1979	Welfare	629	689	582	635	567	505	552	520	443	590	490	452
	Health	259	247	265	246	323	288	275	301	334	341	319	420
	Total social security	888	937	847	880	890	793	827	822	777	931	809	872
													844

Source
8.1 - 8.20 Information Systems Directorate, Policy, Planning and Information Branch, Department of National Health and Welfare.

Housing and construction

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During 1978 decline was evident in both housing starts and completions. Housing starts in Canada declined to 227,667 units from the 1977 level of 245,724. Housing completions also decreased from 251,789 to 246,533 units. The number of dwellings subsidized by direct loans under the National Housing Act (NHA) was slightly lower than in 1977. Those financed by private lenders under NHA mortgage insurance agreements decreased by nearly 75% and the number of units built under the assisted home-ownership and assisted rental programs was also lower than in 1977.

The federal government and housing

9.1

Although the federal government entered the housing field in 1918 when it made money available to the provinces for re-lending to municipalities, the first general item of federal housing legislation was the Dominion Housing Act passed in 1935. This was followed by national housing acts in 1938 and 1944. The present National Housing Act, defined as an act to promote the construction of new houses, the repair and modernization of existing houses and the improvement of housing and living conditions, was passed in 1954.

In general the federal government, through successive housing acts, has attempted to stimulate and supplement the market for housing rather than assume direct responsibilities that belong to other levels of government or that could be borne more effectively by private enterprise. The aim has been to increase the flow of mortgage money and to encourage lenders to make loans on more favourable terms to prospective home owners. Almost half the country's 7.5 million dwelling units have been built since the first covering legislation. About one-third were financed under the housing acts.

All provinces have complementary legislation providing for joint federal-provincial housing and land assembly projects, and most have enacted housing legislation.

Significant changes in federal housing policy in 1978 resulted in amendments to the NHA which were passed in March 1979. These amendments were directed to: provide for social housing for people of low or moderate incomes, to be financed by the private sector through enlarging the program of NHA mortgage insurance and by the provision of subsidies to non-profit and co-operative corporations, both private and public; eliminate the municipal infrastructure program and replace it with an annual subsidy to each province providing for a greater range of capital projects; reduce the duplication of detailed work by federal and provincial officials by relieving the federal government from undertaking project scrutiny; and extend the concept of graduated payments, previously offered in the assisted home-ownership program, to existing housing, substituting private for public capital.

The Ministry of State for Urban Affairs (MSUA) was disbanded on March 31, 1979, as a result of a government decision in November 1978. The ministry was created in 1971 to identify and analyze settlement and urbanization problems of federal concern and to develop policies which would improve the quality of life in Canadian cities.

In 1978 the ministry's operating expenditures, including \$4.0 million for contracts to support MSUA's urban policy research work, totalled \$10.3 million. Contributions supporting urban development projects, planning studies and railway relocation initiatives for other levels of government and undertakings by various organizations totalled \$4.5 million.

Canada Mortgage and Housing Corporation (CMHC)

9.1.1

This corporation is the federal agency which administers the National Housing Act. The name was changed from Central Mortgage and Housing Corporation on July 1, 1979. The change was made to identify it more readily as an agency of the federal government,

with branches across the country. Once primarily concerned with making mortgage loans and insuring loans made by approved NHA lenders, CMHC has become responsible for a growing number of socially oriented housing programs. In recent years amendments to the NHA have been designed to facilitate the supply of housing and to make it possible for more Canadians, particularly low- and moderate-income Canadians, to own or rent accommodation according to their needs. Through assisted home ownership and non-profit corporations and co-operatives there is an increasing range of choices by which those who need housing may obtain it.

Special programs have been made available to provincial and municipal governments to help deal with the varied impacts of urbanization. The neighbourhood improvement program, residential rehabilitation assistance program, new communities program and land assembly provisions are aimed at responding to changing local and regional needs and conditions.

CMHC is also concerned with developing new and innovative solutions to Canadian housing problems. On its own account and in co-operation with other governments and the private sector, CMHC seeks new ways of creating housing and housing forms, using land and servicing it, approaching the planning process and dealing with social, economic, physical and technological problems of housing and communities.

9.2 Housing assistance programs

Social housing. Commitments for public housing, to be rented according to an approved rent-to-income scale and financed by CMHC loans to the provinces and joint investments by CMHC and the provinces, totalled \$244.4 million in 1978. These commitments related to 9,163 dwelling units in public housing projects.

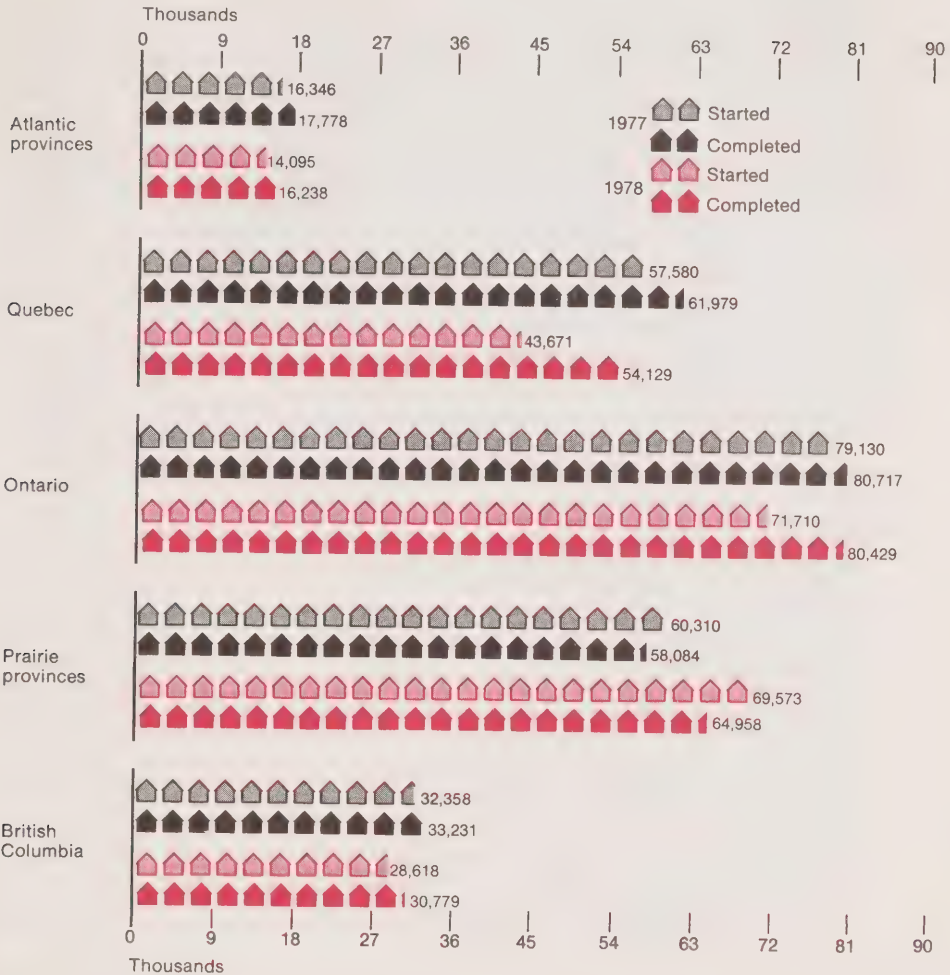
The emphasis in NHA assistance for Canadians with low and modest incomes has shifted in recent years toward non-profit and co-operative housing and away from public housing. Non-profit organizations can provide and operate homes for low-income families, the elderly, or special groups such as the handicapped, and can be constituted exclusively for charitable purposes or be provincially or municipally owned. Besides NHA loans at below market interest rates and capital contributions of 10% of the project's cost, start-up funds are available which help defray expenditures prior to the loan application. Also, land can be leased from CMHC. Its funding of community resource organizations enables the corporation to provide technical aid in project planning and management.

There are two types of co-operative housing. Non-profit co-operatives are organized with a view to collective ownership and management, while housing constructed through a building co-operative remains in individual ownership. All types of NHA assistance provided for non-profit organizations are available to building co-operatives. In 1978, under these programs, \$17.1 million was approved for capital contributions, \$1.5 million for start-up funding and \$201,000 for financial assistance to community resource organizations.

By year end 185,177 occupied units were subsidized under federal-provincial agreements, 12,857 more than in 1977, with rents on a scale graduated according to the tenant's income. The federal government's share was \$179 million, up from \$141 million in 1977.

Rural and native housing program. The objectives of this program are to provide adequate housing for low-income households and individuals in rural communities with populations of 2,500 or less, to give those eligible the opportunity to become involved in the entire housing process and create job opportunities, and to encourage the development and use of house designs that meet rural needs. Since the program was initiated in 1974 with a five-year target of 50,000 completions, over 30,000 units have been started or rehabilitated. In 1978 activity almost doubled to 15,085 units from the 1977 total of 7,563. At this rate the target would probably be achieved by 1980. Under the NHA, \$6.5 million was made available in sustaining grants for associations formed to organize or assist community and native groups, and in provision of training programs and secondment of technical experts.

Dwelling units¹ started and completed, by region, 1977 and 1978



1. Excludes Yukon and Northwest Territories.

Market housing. Three principal forms of NHA assistance are available for housing to be sold or rented on the private market. These are the provision of insurance on mortgage loans made by approved lenders; direct CMHC mortgage loans for both home ownership and rental dwellings which are available from CMHC as a lender of last resort on terms similar to those from private lenders; and CMHC additional help for ownership or rental of moderately priced dwellings.

In 1978 NHA insured mortgage loans made by approved lenders amounted to \$4.4 billion, down from \$6 billion in 1977. To encourage private mortgage lending, CMHC curtailed its own direct lending to \$12.9 million in 1978.

Assisted Home-Ownership Program (AHOP). The program encouraged approved lenders and the building industry to make moderately-priced housing available for sale. To promote home ownership, CMHC provided loans and grants to qualified purchasers of designated units.

To be designated for AHOP assistance, housing had to be built within maximum sale price limits imposed by CMHC for specific market areas. In May 1978 a revised version of AHOP was introduced which provided payment reduction loans to applicants buying new houses financed under NHA insured loans. This program was gradually phased out as the graduated payment mortgage became more widely used.

Graduated payment mortgages, introduced in 1978 by CMHC, can be applied to both new and existing dwellings, for home-ownership and rental projects. Monthly mortgage payments start at a relatively low level and are increased each year over the first decade of the amortization period. The subsequent payments remain constant for the remainder of the mortgage term. With a conventional mortgage, the full amount of the debt is repaid by equal monthly payments. At year end 1978, 3,743 units had been approved under the new arrangements of which 2,124 were rental units.

Assisted Rental Program (ARP). This program stimulated the production of moderately-priced housing for rent. Projects were mostly privately financed through approved lenders and had to be built within size and price levels determined by CMHC.

Assistance was available to builders when the cost of constructing and operating a project exceeded the rents that could be charged. During the first eight months of 1978, 1,920 units were approved under the rental program. In September 1978, the program was terminated.

Land assembly and municipal infrastructure. The provision of an adequate supply of serviced land for residential development has been a major objective of the federal government. During 1978 the federal-provincial task force inquiring into the supply and price of serviced residential land published its report. One of its findings was that the effectiveness of land banking by governments in stabilizing and reducing serviced land prices had not been proven. Later in the year the government stopped funds for new land assembly projects because of the substantial inventory on hand. It also limited future funding for the continued development of lands held in partnership with the provinces. By the end of 1978, \$525.3 million had been provided to municipalities and provinces for the acquisition, development and planning of land for residential purposes.

The municipal infrastructure program came to an end in 1978. It had been in effect for 18 years and had provided more than \$2 billion to assist 6,000 projects in the abatement of pollution and the encouragement of residential development.

Commitments for sewage treatment projects in 1978 totalled \$290.3 million compared to \$247.5 million in the previous year.

A municipal incentives grants program was designed to be in effect for the three-year period 1976-78 and proposals were accepted during these years. Grants became available during that period to motivate municipalities to encourage the development of modest housing, to make more economical use of land through increased density, and to help municipalities offset higher expenditures associated with medium-density development. Grants totalled \$45.8 million in 1978 and \$84.2 million for 1976-78.

Neighbourhood improvement and residential rehabilitation. The principal sources of NHA funding for neighbourhood and residential improvement were the Neighbourhood Improvement Program (NIP) and the Residential Rehabilitation Assistance Program (RRAP). NIP legislation expired as of March 31, 1978.

NIP encouraged municipalities to revitalize older residential neighbourhoods which were occupied predominantly by families and individuals with low and moderate incomes. Projects were planned and implemented by the municipalities and neighbourhood residents. NIP operated under annual agreements between CMHC and the provinces.

During the period the legislation was in effect, from 1973 to 1978, \$202 million of federal contributions and \$64.4 million of federal loan commitments were disbursed to

319 municipalities. The disbursements provided such amenities as community and day-care centres, parks and playgrounds, improvement of water and sewer services and upgrading of sidewalks and street lighting. In 1979 NIP and the municipal infrastructure program were replaced by the Community Services Program (CSP).

Community services. Under the CSP, which started in January 1979, block funds are made directly to the provinces, and are allocated on the basis of the urban population and municipal tax capacity in each province. By this means, each province will be able to decide on the type of community services which will be eligible for funding and how funds will be allotted to its municipalities.

The program was introduced so that federal funds could be used to meet needs and conditions at the local level, and to reduce detailed administrative procedures by disentangling the federal government from project-by-project scrutiny. The initial funding level of the program was \$150 million, to be increased in January 1980 to \$250 million.

Eligible community services outlined by the federal government include the planning and installation of water supplies and sewage systems; the provision of social and cultural facilities, such as day-care centres, libraries and community centres; and community recreation facilities. Funds can also be used for upgrading older, low-income neighbourhoods; for the municipal equity of non-profit housing; for upgrading and insulating municipal buildings and community facilities and for facilities which convert municipal waste to the production of energy.

RRAP which operated in conjunction with NIP will continue. Under this program, loans are made available to home owners to improve and repair old and substandard dwellings. The NHA loans granted under this program are in part forgivable depending on income. In 1978, \$90 million was committed for the rehabilitation of 20,522 dwelling units. Between 1974 and 1978, over \$233 million was committed for the rehabilitation of 20,552 dwelling units.

Home improvement loan program. Under the home improvement loan provision of the NHA, chartered banks and approved credit instalment agencies are authorized to make loans for home improvements at favourable interest rates. These loans are guaranteed by CMHC in return for an insurance fee. In 1978, there were 1,261 loans approved for a total of \$4.2 million.

Insulation programs. During 1977, under federal government direction, CMHC established two new programs for energy conservation in residential dwellings. The home insulation program was instituted in Prince Edward Island and Nova Scotia, two provinces particularly affected by rising energy costs. The Canadian Home Insulation Program (CHIP) applied to older housing in all areas of Canada except Prince Edward Island and Nova Scotia. By December 1978, a total of 190,760 grants had been made under the two programs at an expenditure of \$60.4 million in federal subsidies.

Research

9.2.1

CMHC provides funds to support policy and housing research projects. In 1978 the volume of financial support for these projects increased 45%, from \$757,000 in 1977 to \$1.1 million in 1978.

Projects funded included a national housing design competition to secure plans for more energy efficient houses; an updating of a survey of thermal efficiency of Canadian housing; and a study of housing conversions, demolitions and abandonments in Canada. In addition, there was an examination of long-term demographic changes on the use of housing.

Other projects included research on district heating; a review of the Canadian Water Supply Energy Loop (CANWEL); preliminary studies on the feasibility of controlled air ventilation and heat recovery systems; and development of a residential construction cost information system.

The corporation's involvement with different aspects of solar heating included assisting in the review of aid to solar energy manufacturers for the development of solar heating equipment; assessing the potential for passive solar heating in Canada; and commissioning a major study of solar utilities.

9.2.2 Demonstration projects

CMHC plays a major role in developing and demonstrating concepts that improve the housing and community environments. The objective of the corporation's demonstration program is to test new designs and concepts of accommodation and communities, and to encourage the application of those that prove successful. The corporation relies on the participation of the development industry as a partner in the advancement and marketing of the projects in which the new concepts are incorporated.

CMHC co-operates closely with provincial and local authorities within whose jurisdiction the projects are situated. During 1978 projects were at the construction stage in Charlottetown, PEI, Ottawa, Ont. and Revelstoke, BC. The Maryfield demonstration community in Charlottetown, PEI was planned as a medium-density development of affordable houses designed to conserve land and energy in contrast to the sprawl of bungalows on large lots, with 56 houses completed by year end and another 21 under way. LeBreton Flats, a new community in the Ottawa inner city, was designed to house families of mixed incomes. In the spring of 1978, eight experimental townhouses were available. At Revelstoke, BC, a demonstration community where both home-ownership and rental accommodation will be available, 160 housing units were completed in 1978 and another 40 units were planned to complete the site. Innovations of this community include a road system that minimizes snow clearance for the municipality and a technique for reducing heating requirements.

Planning and site preparation also progressed during 1978 for projects in Ottawa, Montreal, Quebec City and in Saint John, NB. The Woodroffe demonstration community in Ottawa will provide a variety of housing types and preserve the traditional advantages of suburban living while increasing land-use efficiency and improving access to shops and other services. The Vieux Port in Montreal comprises 200 ha (hectares) of land stretching west from the historic area adjacent to old Montreal. The purpose of the project is to recycle and revitalize federal land and buildings on the river front which have not been utilized to maximum potential. The Vieux Port redevelopment project in Quebec City covers land around the Bassin Louis at the foot of the old city. Replanning this federal land would consequently improve the urban environment and encourage conservation in the surrounding area. The market square city centre development project in Saint John would revitalize the city centre through a joint public and private approach in creating a development to serve diverse needs on historic market square.

9.3 Loans and investments

A 1978 capital budget of \$1.3 billion was approved by the government for CMHC loans and commitments under the National Housing Act. During 1978, commitments amounted to \$1.2 billion, compared to \$1.4 billion in 1977 and \$1.6 billion in 1976. The decline in 1978 was accompanied by an increase in cash advances of \$34.2 million. The contrast between this increase and the decline in new loan and investment commitments reflects the substantial volume of undisbursed commitments.

The net growth in the assets of the corporation, 2.7% in 1978, resulted in a total of \$10.1 billion surpassing the \$10 billion mark for the first time. The corporation borrows its investment funds from the Bank of Canada. In 1978, these borrowings rose to \$9.9 billion from \$9.7 billion in the previous year.

Acting as the agent of the federal government, as distinct from its role as a financial institution, the corporation during 1978 advanced \$694.1 million in subsidies, grants and contribution provisions of the NHA. This was 33% more than the \$524 million in 1977. These funds provided financing for public housing subsidies, grants to non-profit corporations, co-operatives and home owners, and for the forgiveness of interest payments under AHOP and ARP. The corporation's net income for 1978, after tax, was \$6.4 million, compared to \$10.8 million in the preceding year.

9.4 Census and survey data on housing

Since 1941 decennial censuses of Canada have provided a comprehensive inventory of the nation's dwelling stock in a complete housing census taken in conjunction with the

censuses of population and agriculture. Detailed information covering the 1941-71 period may be found in the relevant census volumes and reports. Summary data from the 1971 and 1976 censuses included here relate to a selection of the housing characteristics for which data were collected. More detailed information, including cross-classifications of the data, may be obtained from the user services division, regional operations and marketing field, Statistics Canada. Much of the present data was derived from the annual survey of household facilities and equipment carried out by Statistics Canada in conjunction with the May 1976 labour force survey.

Dwellings and housing growth rates

9.4.1

The 1976 Census recorded a total of 7.17 million private occupied dwellings in Canada. (A dwelling, for census purposes, is a structurally separate set of living quarters with a private entrance either from outside the building or from a common hall or stairway inside.) This total represented an 18.8% increase in dwellings since the 1971 Census. It is apparent that, despite slower population growth resulting from declining birth rates and lower immigration, the need for dwellings has continued to increase at a slightly higher rate than was observed in 1966-71. These trends in housing growth rates, including comparisons from 1966 to 1976 for such characteristics as type of dwelling and tenure, are summarized in Table 9.3.

Dwelling types, tenure and size

9.4.2

Dwelling types. Single detached homes continued to be the predominant type of housing in Canada in 1976, although their relative numbers have gradually declined in favour of multiple-type dwellings. Ten years earlier, at the 1966 Census, 62.4% of all dwellings were single detached but this percentage gradually dropped to 59.5% in 1971 and 55.7% in 1976. In the 1966-76 period single detached homes increased by 23.4%, whereas multiple-type units — single attached (double and row houses), apartments and movable dwellings — grew at the significantly higher rate of 63.1%.

Table 9.4 shows the distribution of the two broad dwelling-type classes in 1976 by province and by metropolitan area. Saskatchewan had the largest proportion of single detached homes, 77.1% of its occupied dwellings. Almost 60% of Quebec's dwellings were multiple-type units and only 40% were single detached, by far the lowest proportion among the provinces. The distribution within the major metropolitan centres reflected these provincial ratios in general terms, except that in most cases the proportion of multiple-unit dwelling types was considerably higher than for the province as a whole. This was particularly evident in Montreal and Toronto, where only 24.2% and 39.8%, respectively, of all occupied dwellings were single detached homes.

Tenure. Home ownership increased 21.8% between 1971 and 1976 and the number of rented dwellings increased 14.1%. The faster growth rate in home ownership in recent years reversed the trend observed in 1966-71 when the number of rented dwellings increased 25.5% compared with the 11.2% increase in owned dwellings.

As in the case of dwelling types, there was considerable variation among provinces in the proportions of owned dwellings in 1976, ranging from a low of 50.4% in Quebec to a high of 80.6% in Newfoundland. Table 9.5 shows that the increase in owner occupancy in the 1971-76 period was characteristic of all provinces, and at a fairly uniform rate.

There was a significant difference in the proportion of home ownership between urban and rural areas. While 55.6% of private dwellings in urban areas were owner-occupied, the proportion in rural areas was 84.2%. Table 9.5 also shows that, in general, percentage of home ownership varied inversely with size of urban communities. In urban areas of 500,000 population and over, for example, 48.2% of private dwellings were owner-occupied, compared with a range from 58.4% to 70.6% in smaller urban areas. In rural areas over 90% of dwellings in farming communities were owner-occupied, but a slightly lower percentage of home ownership (82.4%) was reported for non-farm communities.

Dwelling size. The average size of Canadian dwellings in the period 1971-76 remained virtually constant at 5.4 rooms, although as Table 9.6 shows, the average number of rooms per dwelling declined in all provinces east of Ontario and in Manitoba. In the

nation as a whole, Prince Edward Island had the highest average in 1976 at 5.89 rooms per dwelling, and Manitoba the lowest at 5.06.

9.4.3 Period of construction and length of occupancy

Period of construction. Figures from the 1971 Census indicate that 28.8% of the occupied housing stock was built after 1960. Table 9.7 shows the percentage distribution in 1971 of period of construction by province and by census metropolitan area. There were significant variations from province to province in the proportion of new dwellings. The lowest percentages of dwellings built after 1960 were found in the Atlantic provinces, Prince Edward Island having the lowest at 19%. Newfoundland was an exception, however, its 28.6% being close to the national average. Figures above the national average were found only in Alberta, British Columbia, Yukon and Northwest Territories, which reported, respectively, 34.5%, 35.3%, and 58.4% of dwellings built after 1960. Values for census metropolitan areas ranged from 19.3% for Windsor to 40.9% for Edmonton.

Length of occupancy. The 1971 Census data on length of occupancy of household heads, displayed in Table 9.7, indicate the mobility of Canadians. Of all household heads in 1971, 66.8% had lived for 10 years or less in the dwelling in which they were enumerated, and 17.8% for less than one year — little changed from the 68.6% and 15.3%, respectively, in 1961.

The pattern of provincial variation for length of occupancy was similar to that for period of construction. The proportion of household heads occupying their present dwelling for 10 years or less was lowest in the Maritimes, ranging from 50.2% in Prince Edward Island to 55.0% in New Brunswick. The highest percentages were 70.6% in Alberta, 74.1% in British Columbia, and 90.7% in Yukon and Northwest Territories. For census metropolitan areas the range extended from 59.5% for Windsor to 76.1% for Calgary and 76.1% for Edmonton. Fully 25.7% of household heads in Calgary had occupied their dwellings for less than one year.

9.4.4 Heating fuel

In view of world energy shortages, data on home heating fuels are of particular interest. The 1976 survey data show that 47.5% of occupied Canadian dwellings were heated principally by oil or other liquid fuels, while 36.7% used gas. The major change since 1961 was a strong increase in the proportion of dwellings heated by gas, from 18.0% to 36.7%. This was offset by a correspondingly large decrease, from 10.6% to just 0.2%, in the proportion of dwellings using coal or coke. The category of other fuels declined from 14.3% to 2.4%, largely as a result of an increase from 0.7% to 13.1% in the proportion of dwellings which were electrically heated and a corresponding decrease in the proportion of dwellings heated by wood.

Table 9.8 gives the percentage distribution of dwellings by principal heating fuel, by province and by metropolitan area. There was a sharp difference between Quebec and Ontario in the proportions of dwellings heated principally by oil and by gas. In Quebec and the Atlantic provinces the proportion using gas as fuel was never higher than 6.9% (Quebec), while the proportion using oil was 70.5% or higher in all cases. In Ontario and the western provinces the proportion using gas was never lower than 45.1% (Ontario and British Columbia) and went as high as 89.7% for Alberta, while the proportion using oil was never above 41.8% and was as low as 4.6% in Alberta.

9.4.5 Household facilities and equipment

Survey data. The annual survey of household facilities and equipment provides an inventory to measure advances in living standards and to provide data for market research. The 1978 survey covered items such as plumbing and sanitary facilities, heating equipment, and accessories such as refrigerators, freezers, dishwashers, clothes dryers and television sets. Only the data on the first of these subjects, that is, the incidence of homes with running water, bath and toilet facilities, are shown by province in Table 9.9.

Continuing the rising trend in recent decades, there was again a marked improvement in the number of dwellings equipped with plumbing and sanitary facilities during the 1961-78 period. Dwellings with running water increased from 89.1% of all dwellings in 1961 to 99.1% in 1978. Similarly, households reporting a bath or shower for their exclusive use advanced from 77.1% to 97.3%, and households with exclusive use of a flush toilet from 79.0% to 98.0%.

Annual estimates. Table 9.10 presents some summary statistics from the 1978 sample survey on household facilities and equipment. About 34,000 households, chosen by area sampling methods, were included. Unlike decennial censuses, the sample survey cannot produce data for the smaller localities and areas, but much of the information shown in Table 9.10 for Canada is available for individual provinces and selected metropolitan areas.

This survey also provides estimates on heating fuels, indicating that electricity has been gaining in popularity, generally at the expense of oil. The proportion of Canadian households using electric heat (15.6% in May 1978) is still far below that of households using oil (43.6%). Corresponding percentages for 1977 were 13.8% using electricity and 45.1% using oil. The percentage of households using gas remained relatively stable at about 38% in both years. Five years earlier, in 1973, the figures were: oil 55.5%; gas 34.8%; and electricity 7.0%.

The 1978 survey provided a number of other findings. The percentage of households with overnight camping equipment was 27.1%, up from 23.5% two years earlier. Skiing proved to be a popular sport with 16.9% of households owning at least one pair of cross-country skis and 14.2% owning downhill skis. While 70.1% of homes had five or more rooms, half of the 70.1% were occupied by small households of three persons or less. The survey also showed that 63.2% of private dwellings were owner-occupied, including 121,000 condominiums.

Construction

9.5

Value of construction work

9.5.1

The data on the construction industry represent the estimated total value of all new and repair construction performed by contractors and by the labour forces of utility, manufacturing, mining and logging firms, government departments, home-owner builders and other persons or firms not primarily engaged in the construction industry. Table 9.11 shows the value of new and repair construction work and Table 9.12 the value of such work performed by contractors and others during 1974-78, preliminary expenditures for 1977 and intentions for 1978. Table 9.21 gives estimates of total expenditures in Canada on various types of construction.

Table 9.13 shows the principal statistics of the construction industry for 1976-78 by province and by contractors, utilities, governments and others. All estimates given for cost of materials used are based on ratios of this item to total value of work performed, derived from annual surveys of construction work performed by contractors and others and applied to the total value-of-work figures. Estimates of labour content are similarly based but, in addition, are adjusted to include working owners and partners and their withdrawals.

Chapter 23 includes detailed price index numbers of construction and capital goods which measure price changes in residential and non-residential building materials and changes in construction wage rates; price indexes of highway construction which show annual costs to provincial governments in contracts awarded for highway construction as a percentage of prices paid in 1971; and price indexes of electrical utility construction (distribution systems, transmission lines, transformer stations) which provide an estimate of the impact of price change on the cost of materials, labour and equipment used in constructing and equipping such utilities.

Building permits issued

9.5.2

The estimated value of proposed construction is indicated by the value of building permits issued. Figures of building permits are collected from approximately 2,000

municipalities across the country and are available for individual municipalities, metropolitan areas, provinces, economic areas and census divisions.

The total value of permits issued for building construction in 1978 was \$13.1 billion, 5.8% higher than in 1977. Residential construction value decreased by 1.0% and overall non-residential construction value increased by 15.8%, reflecting an increase of 4.1% in the industrial, 28.4% in the commercial, and 1.7% in the institutional and government construction sectors.

Permit values rose in all provinces except Newfoundland, Quebec, Saskatchewan and British Columbia. The value of building permits issued in each province in 1977 and 1978 is given in Table 9.14, in 50 municipalities in Table 9.15 and in 23 metropolitan areas in Table 9.16. These metropolitan areas made up 64% of the 1978 total for Canada.

9.6 Capital expenditures

Capital spending in Canada by all sectors of the economy during 1979 was expected to reach about \$54.7 billion, an increase of 8.9% over the 1978 level of about \$50.2 billion. These estimates were in current dollars without any adjustment for price increase and reflected the intended outlays by respondents between November 1978 and January 1979. The survey covered business establishments, educational and other institutions and governments at all levels.

Intended capital expenditures on new construction in 1979 were estimated at \$34.8 billion, an increase of 7.9% over the 1978 total of \$32.3 billion. The two main elements of construction are shown at \$11.7 billion (\$11.4 billion in 1978) for residential and \$23.1 billion (\$20.9 billion) for non-residential. The increase for housing was 3.0% and for non-residential construction, 10.6%.

Acquisition of new machinery and equipment during 1979 was expected to amount to \$19.9 billion, 10.7% above the 1978 total of \$18 billion. Rates of increase were 9.2% for 1978 and 6.3% in 1977.

Table 9.17 shows the trend in capital spending over the years 1970-79 in both current and constant (1971) dollars. Table 9.18 summarizes capital and repair expenditures by economic sector and Table 9.19 contains details of the manufacturing, mining and utilities sectors for 1977-79. A summary of capital expenditures in Table 9.20, representing gross additions to the capital stock of each province and territory, reflects economic activity in the area and employment and income-giving effects in other regions. For example, spending millions of dollars on plant and equipment in Western Canada may generate considerable activity in machinery industries in Ontario and Quebec as well as construction activity in the western provinces.

Sources

9.1 - 9.3 Editorial Services, Canada Mortgage and Housing Corporation.

9.4 - 9.4.4 Housing and Social Characteristics, Social Statistics Field, Statistics Canada.

9.4.5 Consumer Income and Expenditure Division, Social Statistics Field, Statistics Canada.

9.5 - 9.6 Construction Division, Economic Statistics Field, Statistics Canada.

Tables

..	not available	e	estimate
...	not appropriate or not applicable	p	preliminary
—	nil or zero	r	revised
--	too small to be expressed	certain tables may not add due to rounding	

9.1 Dwelling units¹ started and completed, by type of financing, 1976-78 and by region, 1977 and 1978

Year and region	Dwelling units started				Total	Dwelling units completed
	National Housing Act		Conventional institutional loans	All other financing		
	CMHC	Approved lenders loans				
1976	24,087	93,883	71,776	83,457	273,203	236,249
1977	17,819	102,462	71,700	53,743	245,724	251,789
1978	14,760	72,254	73,600	67,053	227,667	246,533
1977						
Atlantic provinces	1,996	5,169	5,870	3,311	16,346	17,778
Quebec	3,074	23,660	13,214	17,632	57,580	61,979
Ontario	5,149	40,262	28,686	5,033	79,130	80,717
Prairie provinces	4,798	21,251	15,597	18,664	60,310	58,084
British Columbia	2,802	12,120	8,333	9,103	32,358	33,231
1978						
Atlantic provinces	1,710	2,816	5,184	4,385	14,095	16,238
Quebec	3,499	12,824	10,600	16,748	43,671	54,129
Ontario	5,374	30,480	27,058	8,798	71,710	80,429
Prairie provinces	3,126	18,380	23,935	24,132	69,573	64,958
British Columbia	1,051	7,754	6,823	12,990	28,618	30,779

¹Excludes Yukon and Northwest Territories.

9.2 Dwelling units started in metropolitan areas, large urban centres and urban agglomerations, 1977 and 1978

Area	Dwelling units started		Single detached	Semi-detached and duplex	Row	Apartment; other
	1977	1978				
	Total	Total				
METROPOLITAN AREAS	156,820	143,500	53,271	16,214	17,274	56,741
Calgary	13,190	15,382	4,780	2,271	3,033	5,298
Chicoutimi-Jonquière	1,262	1,540	697	90	55	698
Edmonton	12,206	17,065	6,202	1,092	2,790	6,981
Halifax	4,277	2,116	1,013	106	87	910
Hamilton	3,956	2,531	1,219	846	46	420
Kitchener	3,466	2,074	1,127	494	252	201
London	3,973	4,819	1,453	578	436	2,352
Montreal	27,193	18,300	7,772	1,780	235	8,513
Oshawa	2,672	2,183	955	651	354	223
Ottawa-Hull	7,429	7,592	1,445	1,302	2,729	2,116
Quebec	8,456	7,004	3,854	730	70	2,350
Regina	3,497	1,917	1,073	128	—	716
Saint John	516	490	484	6	—	—
St. Catharines-Niagara	2,341	2,383	965	276	66	1,076
St. John's	1,012	842	495	104	50	193
Saskatoon	3,976	3,250	1,685	246	—	1,319
Sudbury	1,265	512	336	48	—	128
Thunder Bay	1,620	1,133	584	167	40	342
Toronto	27,918	26,051	6,257	2,900	4,401	12,493
Vancouver	15,257	12,183	6,164	836	1,628	3,555
Victoria	3,166	1,916	1,191	160	49	516
Windsor	1,819	2,511	1,035	8	25	1,443
Winnipeg	6,353	9,706	2,485	1,395	928	4,898
LARGE URBAN CENTRES AND URBAN AGGLOMERATIONS	13,846	10,549	5,442	902	337	3,868
Brantford	1,026	761	320	146	30	265
Guelph	943	143	129	14	—	—
Kamloops	526	555	275	96	—	—
Kelowna	713	665	361	34	90	94
Kingston	1,154	931	389	196	96	174
Moncton	406	543	483	4	50	296
North Bay	514	291	127	88	—	56
Peterborough	649	157	157	—	6	70

9.2 Dwelling units started in metropolitan areas, large urban centres and urban agglomerations, 1977 and 1978 (concluded)

1977 and 1978 (concluded)						
Area	Dwelling units started		Single detached	Semi-detached and duplex	Row	Apartment; other
	1977 Total	1978 Total				
LARGE URBAN CENTRES AND URBAN AGGLOMERATIONS (concluded)						
Prince George	977	570	548	16	—	6
Sarnia	1,500	938	308	96	44	490
Sault Ste Marie	749	660	289	138	—	233
Shawinigan	365	465	230	6	—	229
Sherbrooke	1,796	1,413	499	30	9	875
St-Jean	654	476	248	—	—	228
Sydney/Sydney Mines	765	697	639	—	—	58
Trois-Rivières	1,109	1,284	440	38	12	794
Other areas	75,058	73,618	51,316	2,816	2,768	16,718
Canada ¹	245,724	227,667	110,029	19,932	20,379	77,327

¹Excludes the Yukon and Northwest Territories.

9.3 Summary of housing characteristics, censuses of 1966, 1971 and 1976

Item		1966	1971	1976	Percentage increase	
					1966-71	1971-76
Total occupied private dwellings	No. %	5,180,475 100.0	6,034,510 100.0	7,166,095 100.0	16.5 ...	18.8 ...
TYPE OF DWELLING						
Single detached	No. %	3,234,125 62.4	3,591,770 59.5	3,991,540 55.7	11.1 ...	11.1 ...
Single attached	No. %	401,755 7.8	679,590 ¹ 11.3	587,180 8.2	69.2 ...	-13.6 ...
Apartment and duplex	No. %	1,516,420 29.3	1,699,045 ¹ 28.2	2,412,660 33.7	12.0 127.5	42.0 172.5
Mobile	No. %	28,180 0.5	64,105 1.1	174,710 2.4	...	...
TENURE						
Owned	No. %	3,269,970 63.1	3,636,925 60.3	4,431,235 61.8	11.2 ...	21.8 ...
Rented	No. %	1,910,505 36.9	2,397,580 39.7	2,734,860 38.2	25.5 ...	14.1 ...

¹In 1971 the "single attached" included some "apartment"; consequently, there should be more dwellings in "apartment and duplex" and less dwellings in "single attached" than the figures shown in this table.

9.4 Type of dwelling, by province and by census metropolitan area, 1976

Province and census metropolitan area	Total occupied private dwellings ¹	Single detached	Multiple-unit types ²	Single detached %	Multiple-unit types ² %
PROVINCE					
Newfoundland	131,665	95,925	31,455	72.9	23.9
Prince Edward Island	32,930	24,315	7,000	73.8	21.3
Nova Scotia	243,100	162,550	66,570	66.9	27.4
New Brunswick	190,435	125,830	52,585	66.1	27.6
Quebec	1,894,110	745,595	1,120,630	39.4	59.2
Ontario	2,634,620	1,494,465	1,117,365	56.7	42.4
Manitoba	328,005	219,950	100,140	67.1	30.5
Saskatchewan	291,155	224,510	55,755	77.1	19.2
Alberta	575,280	372,420	174,610	64.7	30.4
British Columbia	828,290	516,485	268,690	62.4	32.4
Yukon	6,495	3,425	2,165	52.7	33.4
Northwest Territories	10,020	6,070	2,865	60.6	28.7
Canada	7,166,095	3,991,540	2,999,840	55.7	41.9

9.4 Type of dwelling, by province and by census metropolitan area, 1976 (concluded)

Province and census metropolitan area	Total occupied private dwellings ¹	Single detached	Multiple-unit types ²	Single detached %	Multiple-unit types ² %
METROPOLITAN AREA					
Calgary, Alta.	155,155	90,765	62,475	58.5	40.3
Chicoutimi, Que.	33,850	16,165	17,080	47.8	50.5
Edmonton, Alta.	179,635	100,345	77,350	55.9	43.1
Halifax, NS	81,845	39,335	39,030	48.1	47.7
Hamilton, Ont.	172,510	101,470	70,805	58.8	41.0
Kitchener, Ont.	87,880	47,305	40,455	53.8	46.0
London, Ont.	91,770	51,305	39,830	56.1	43.4
Montreal, Que.	924,635	223,365	698,750	24.2	75.6
Oshawa, Ont.	41,445	24,935	16,440	60.2	39.7
Ottawa-Hull, Ont., Que.	225,105	94,105	129,445	41.8	57.5
Quebec, Que.	164,600	60,065	103,180	36.5	62.7
Regina, Sask.	49,790	33,310	17,635	66.9	32.5
Saint John, NB	34,065	14,780	17,635	43.4	51.8
St. Catharines, Ont.	97,395	67,860	29,205	69.7	30.0
St. John's, Nfld.	36,800	18,475	17,690	50.2	48.1
Saskatoon, Sask.	44,800	28,315	16,045	63.2	35.8
Sudbury, Ont.	45,710	26,080	19,030	57.1	41.6
Thunder Bay, Ont.	37,270	26,240	10,735	70.4	28.8
Toronto, Ont.	909,530	361,560	547,435	39.8	60.2
Vancouver, BC	407,560	231,915	171,080	56.9	42.0
Victoria, BC	81,005	46,995	32,680	58.0	40.3
Windsor, Ont.	80,190	53,705	25,565	67.0	31.9
Winnipeg, Man.	197,305	115,400	81,090	58.5	41.1

¹Includes mobile homes and other movable dwellings.

²Includes double and row houses, apartments, duplexes and dwellings attached to non-residential structures.

9.5 Owned and rented dwellings, by province and type of locality, censuses of 1971 and 1976

Province or territory and type of locality	1971				1976			
	Owned	Rented	Percentage		Owned	Rented	Percentage	
			Owned	Rented			Owned	Rented
PROVINCE								
Newfoundland	88,335	22,110	80.0	20.0	106,180	25,485	80.6	19.4
Prince Edward Island	20,725	7,155	74.3	25.7	25,225	7,700	76.6	23.4
Nova Scotia	147,705	59,800	71.2	28.8	176,055	67,040	72.4	27.6
New Brunswick	109,450	48,185	69.4	30.6	136,795	53,640	71.8	28.2
Quebec	761,340	843,450	47.4	52.6	953,960	940,155	50.4	49.6
Ontario	1,400,340	825,145	62.9	37.1	1,676,250	958,370	63.6	36.4
Manitoba	190,585	97,790	66.1	33.9	217,685	110,320	66.4	33.6
Saskatchewan	194,535	73,035	72.7	27.3	219,925	71,230	75.5	24.5
Alberta	296,705	167,910	63.9	36.1	372,825	202,455	64.8	35.2
British Columbia	422,785	244,765	63.3	36.7	540,635	287,655	65.3	34.7
Yukon and Northwest Territories	4,425	8,240	35.0	65.0	5,705	10,820	34.5	65.5
Canada	3,636,925	2,397,585	60.3	39.7	4,431,235	2,734,860	61.8	38.2
TYPE OF LOCALITY								
Urban	2,572,885	2,164,535	54.3	45.7	3,123,330	2,489,720	55.6	44.4
500,000 and over	956,765	1,118,550	46.1	53.9	1,367,720	1,462,950	48.2	51.8
100,000-499,999	556,375	428,770	56.5	43.5	631,220	403,305	61.0	39.0
30,000- 99,999	304,450	230,365	56.9	43.1	338,915	241,440	58.4	41.6
5,000- 29,999	449,685	248,740	64.4	35.6	469,225	250,200	65.2	34.8
Under 5,000	305,610	138,105	68.9	31.1	316,245	131,825	70.6	29.4
Rural	1,064,045	233,050	82.0	18.0	1,307,905	245,145	84.2	15.8
Non-farm	758,830	210,830	78.3	21.7	1,071,475	229,200	82.4	17.6
Farm	305,210	22,215	93.2	6.8	236,425	15,945	93.7	6.3

9.6 Average number of rooms per dwelling, by province, 1971 and 1976

Province	Average number of rooms per dwelling	
	1971 ¹	1976 ²
Newfoundland	5.8	5.66
Prince Edward Island	6.1	5.89
Nova Scotia	5.7	5.51
New Brunswick	5.7	5.68
Quebec	5.2	5.19
Ontario	5.6	5.59
Manitoba	5.2	5.06
Saskatchewan	5.3	5.49
Alberta	5.4	5.40
British Columbia	5.2	5.25
Total	5.4	5.41

¹1971 Census.

²Household facilities and equipment survey, May 1976.

9.7 Period of construction and length of occupancy, by province and by census metropolitan area, 1971 (percentage)

Province and census metropolitan area	Period of construction				Length of occupancy					
	Before 1946	1946-60	1961-71 ¹	Total	Less than 1 year	1-2 years	3-5 years	6-10 years	More than 10 years	Total
PROVINCE										
Newfoundland	35.0	36.4	28.6	100.0	11.1	11.7	13.5	16.1	47.6	100.0
Prince Edward Island	62.2	18.7	19.0	100.0	11.7	11.4	12.3	14.8	49.7	100.0
Nova Scotia	53.2	25.6	21.1	100.0	14.4	13.1	12.7	14.1	45.7	100.0
New Brunswick	50.4	27.9	21.7	100.0	14.1	13.0	13.3	14.6	45.0	100.0
Quebec	37.5	33.9	28.6	100.0	17.2	17.5	15.5	17.9	32.0	100.0
Ontario	39.8	32.2	28.0	100.0	17.5	17.0	16.2	16.3	32.9	100.0
Manitoba	42.6	32.2	25.3	100.0	17.8	14.6	14.6	16.2	36.8	100.0
Saskatchewan	42.3	32.6	25.1	100.0	14.7	12.6	14.2	18.1	40.4	100.0
Alberta	26.8	38.7	34.5	100.0	20.6	16.7	16.5	16.8	29.4	100.0
British Columbia	29.6	35.1	35.3	100.0	22.5	18.3	17.6	15.7	25.9	100.0
Yukon and Northwest Territories	9.5	32.2	58.4	100.0	34.9	26.4	17.9	11.5	9.2	100.0
Canada	38.0	33.2	28.8	100.0	17.8	16.6	15.8	16.6	33.2	100.0
METROPOLITAN AREA										
Calgary, Alta.	19.7	40.6	39.7	100.0	25.7	18.1	17.3	15.0	23.9	100.0
Chicoutimi—Jonquière, Que.	36.8	40.4	22.8	100.0	15.8	15.5	14.0	15.4	39.2	100.0
Edmonton, Alta.	18.0	41.2	40.9	100.0	23.6	18.6	17.3	16.6	23.8	100.0
Halifax, NS	34.8	32.8	32.4	100.0	22.7	17.5	16.1	15.4	28.2	100.0
Hamilton, Ont.	37.5	34.1	28.4	100.0	16.7	17.0	16.9	16.6	32.8	100.0
Kitchener, Ont.	32.9	29.9	37.2	100.0	21.7	18.4	15.4	15.2	29.2	100.0
London, Ont.	39.4	29.7	30.9	100.0	21.2	17.2	16.5	14.6	30.5	100.0
Montreal, Que.	31.1	36.4	32.4	100.0	19.5	19.9	16.5	19.0	25.1	100.0
Ottawa—Hull, Ont., Que.	28.7	33.9	37.4	100.0	21.5	19.1	17.4	17.2	24.9	100.0
Quebec, Que.	35.2	29.6	35.2	100.0	18.9	17.3	15.9	17.4	30.5	100.0
Regina, Sask.	30.5	35.9	33.7	100.0	21.5	16.9	15.7	18.6	27.3	100.0
Saint John, NB	53.7	23.9	22.4	100.0	16.1	16.0	16.7	17.4	33.8	100.0
St. Catharines—Niagara, Ont.	41.8	35.8	22.4	100.0	14.9	14.3	14.8	15.9	40.1	100.0
St. John's, Nfld.	36.2	32.2	31.6	100.0	14.6	14.6	15.6	17.7	37.5	100.0
Saskatoon, Sask.	27.6	35.0	37.3	100.0	24.3	17.5	15.7	16.7	25.8	100.0
Sudbury, Ont.	30.6	41.4	28.1	100.0	19.6	18.1	15.7	15.3	31.2	100.0
Thunder Bay, Ont.	44.4	35.3	20.2	100.0	14.6	14.1	15.2	16.9	39.2	100.0
Toronto, Ont.	30.7	35.3	34.0	100.0	19.1	19.4	17.5	17.2	26.8	100.0
Vancouver, BC	30.8	35.5	33.7	100.0	22.1	17.9	17.3	15.6	27.1	100.0
Victoria, BC	36.2	32.9	30.9	100.0	22.0	18.1	17.3	16.6	26.0	100.0
Windsor, Ont.	49.1	31.6	19.3	100.0	16.9	14.0	13.5	15.1	40.5	100.0
Winnipeg, Man.	41.5	33.4	25.1	100.0	20.2	16.1	15.1	15.5	33.1	100.0

¹Includes the first five months only of 1971.

9.8 Percentage distribution of principal fuels used for home heating, by province and by selected census metropolitan area, 1976¹

Province and census metropolitan area	Total	Oil or other liquid fuel	Piped gas	Coal or coke	Other ²	Electricity
PROVINCE						
Newfoundland	100.0	70.8	...	--	--	24.6
Prince Edward Island	100.0	90.6	...	--	--	...
Nova Scotia	100.0	83.7	...	2.2	4.4	8.8
New Brunswick	100.0	81.4	...	--	4.6	13.4
Quebec	100.0	70.5	6.9	--	2.5	20.0
Ontario	100.0	41.8	45.1	--	1.4	11.6
Manitoba	100.0	22.0	62.7	--	1.3	12.7
Saskatchewan	100.0	23.3	72.0	--	...	...
Alberta	100.0	4.6	89.7	1.3	3.1	14.5
British Columbia	100.0	37.8	45.1	--	2.3	...
Canada	100.0	47.5	36.7	0.2	2.4	13.1
METROPOLITAN AREA						
Calgary, Alta.	100.0	...	98.4	...	...	...
Edmonton, Alta.	100.0	...	97.9	...	...	...
Halifax, NS	100.0	92.1	...	...	...	7.6
Hamilton, Ont.	100.0	41.1	50.7	...	...	7.7
Kitchener—Waterloo, Ont.	100.0	45.5	39.6	...	...	14.9
London, Ont.	100.0	16.5	76.0	...	...	7.1
Montreal, Que.	100.0	70.2	12.3	...	...	16.8
Ottawa—Hull, Ont., Que.	100.0	61.1	22.8	...	...	15.8
Quebec—Lévis, Que.	100.0	79.8	...	...	...	19.6
St. Catharines—Niagara, Ont.	100.0	18.8	76.3	...	...	4.6
Toronto, Ont.	100.0	36.2	55.6	...	...	7.9
Vancouver, BC	100.0	30.1	63.1	...	...	6.0
Victoria, BC	100.0	73.8	...	...	...	24.7
Windsor, Ont.	100.0	6.7	77.3	...	...	16.0
Winnipeg, Man.	100.0	9.9	81.5	...	...	8.5

¹Household facilities and equipment survey, May 1976.

²Includes bottled gas, wood and sawdust.

9.9 Percentage of dwellings with specified facilities, by province, 1978¹

Province	Percentage of dwellings with		
	Running water	Bath or shower (exclusive use)	Flush toilet
Newfoundland	95.6	87.6	92.7
Prince Edward Island	97.1	85.3	94.1
Nova Scotia	97.1	92.1	93.8
New Brunswick	97.4	94.2	96.3
Quebec	99.9	98.0	99.4
Ontario	99.6	98.4	98.6
Manitoba	97.5	96.0	95.7
Saskatchewan	96.3	93.6	92.9
Alberta	98.3	97.3	97.5
British Columbia	99.4	98.4	98.8
Canada	99.1	97.3	98.0

¹Household facilities and equipment survey, May 1978.

9.10 Annual estimates of household facilities and equipment, 1978

Item	Estimated households 1978 (May) '000	Percentage of households		
		1978 (May)	1977 (May)	1976 (May)
Total households	7,320	100.0	100.0	100.0
Principal heating facilities				
Furnaces	5,667	77.4	78.6	78.8
Oil	2,889	39.5	40.5	42.5
Gas	2,672	36.5	36.8	35.7
Wood, coal and other	106	1.4	1.3	0.6
Other equipment	1,655	22.6	21.4	21.2
Oil	300	4.1	4.6	5.1
Gas	104	1.4	1.6	1.6
Wood, coal and other	109	1.5	1.4	1.4
Electricity	1,142	15.6	13.8	13.1
Cooking fuel				
Electricity	6,437	87.9	86.2	86.9
Piped gas	559	7.6	8.4	8.2
Bottled gas	94	1.3	1.5	1.5
Wood or coal	116	1.6	1.8	1.3
Kerosene, oil or other	101	1.4	1.8	2.0
Fuel used for piped hot water supply				
Electricity	3,748	51.2	49.9	49.0
Gas	2,534	34.6	35.5	34.6
Oil	872	11.9	11.7	13.1
Coal, wood and other	27	0.4	0.8	0.4
No hot water supply	139	1.9	2.2	2.8
Refrigerators and home freezers				
Electric refrigerators	7,276	99.4	99.4	99.2
Home freezers	3,455	47.2	47.5	43.5
Washing machines				
Automatic	4,328	59.1	59.2	55.9
Other electric	1,261	17.2	17.2	20.2
Clothes dryers	4,351	59.4	58.7	54.7
Telephones	7,063	96.5	96.4	96.5
Radios				
All types, except car	7,208	98.5	98.0	98.5
FM receivers	6,161	84.2	82.3	76.5
TV sets				
All types	7,122	97.3	97.2	96.6
Black and white	3,819	52.2	56.3	62.4
Colour	5,294	72.3	67.8	60.6
Cable television	3,625	49.5	46.9	1
Record players	5,768	78.8	77.4	76.5
Automobiles				
One automobile	3,989	54.5	54.5	55.0
Two or more automobiles	1,755	24.0	24.3	24.4
Miscellaneous				
Window-type air conditioners	785	10.7	10.9	9.7
Central-unit air conditioners	331	4.5	4.4	3.7
Automatic dishwashers	1,745	23.8	21.8	18.6
Adult-sized bicycles	3,072	42.0	40.6	39.1
Snowmobiles	710	9.7	10.0	9.8
Snowblowers	695	9.5	1	7.8

9.10 Annual estimates of household facilities and equipment, 1978 (concluded)

Item	Estimated households 1978 (May) '000	Percentage of households		
		1978 (May)	1977 (May)	1976 (May)
Lawnmowers — power	4,191	57.3	¹	56.7
Boats	1,081	14.8	¹	14.1
Overnight camping equipment	1,981	27.1	¹	23.5
Downhill snow skis	1,037	14.2	²	²
Cross-country snow skis	1,239	16.9	²	²
Vacation homes	473	6.5	¹	6.9
Condominium (owned)	121	1.7	1.4	²

¹Data not collected in 1977.²New item in 1978.³Data not collected in 1976.9.11 Value of new and repair construction work performed, 1973-78¹

Year	New \$'000,000	Repair \$'000,000	Total \$'000,000	Total construction as percentage of gross national expenditure
1973	16,954	3,220	20,174	16.3 ¹
1974	20,772	3,921	24,693	16.8 ¹
1975	24,056	4,320	28,376	17.2 ¹
1976	28,145	4,986	33,131	17.4
1977	30,269	5,484	35,753	17.2
1978	31,913	5,952	37,865	—

¹Actual expenditures 1973-76; preliminary actual 1977; intentions 1978.9.12 Value of construction work performed, by contractors and others, 1974-78¹ (million dollars)

Item	1974	1975	1976	1977	1978
Contract construction	19,618	22,592	27,101	28,559	29,981
New	17,071	19,801	23,822	24,970	26,035
Repair	2,547	2,791	3,279	3,589	3,946
Other construction ²	5,075	5,784	6,030	7,194	7,884
New	3,701	4,255	4,323	5,299	5,878
Repair	1,374	1,529	1,707	1,895	2,006
Total, construction	24,693	28,376	33,131	35,753	37,865
New	20,772	24,056	28,145	30,269	31,913
Repair	3,921	4,320	4,986	5,484	5,952

¹Actual expenditures 1974-76; preliminary actual 1977; intentions 1978.²Work done by the labour forces of utilities, government departments and other employers not primarily engaged in the construction industry.9.13 Labour content, cost of materials and value of work performed in construction, by province and by employer, 1976-78¹

Province and employer	Year	Labour content		Cost of materials used \$'000	Value of work performed \$'000
		No.	Value \$'000		
PROVINCE	1976	17,470	265,162	268,614	733,028
Newfoundland	1977	13,256	219,806	219,765	593,306
	1978	14,079	246,702	246,757	668,901
Prince Edward Island	1976	2,630	34,056	41,948	100,512
	1977	3,000	41,458	53,017	123,797
	1978	3,175	46,628	58,438	139,577
Nova Scotia	1976	20,935	304,648	329,495	874,040
	1977	19,884	318,643	341,683	908,002
	1978	20,825	343,815	366,524	983,665
New Brunswick	1976	23,799	325,136	315,035	892,979
	1977	22,218	332,066	315,404	883,679
	1978	22,151	350,044	333,824	936,572
Quebec	1976	159,924	2,734,289	2,817,743	7,903,180
	1977	152,502	2,953,659	3,015,641	8,676,518
	1978	148,112	3,058,397	3,100,913	9,058,669
Ontario	1976	222,004	3,605,275	3,784,763	10,065,954
	1977	209,062	3,754,962	3,939,005	10,475,509
	1978	207,494	3,945,205	4,160,993	11,060,677

9.13 Labour content, cost of materials and value of work performed in construction, by province and by employer, 1976-78* (concluded)

Province and employer	Year	Labour content		Cost of materials used \$ '000	Value of work performed \$ '000
		No.	Value \$ '000		
PROVINCE (concluded)					
Manitoba	1976	27,029	470,534	446,927	1,287,615
	1977	27,333	503,102	481,491	1,385,974
	1978	27,207	528,923	515,092	1,465,635
Saskatchewan	1976	32,169	506,218	519,439	1,421,590
	1977	32,194	557,561	572,171	1,557,384
	1978	32,387	597,209	605,573	1,674,357
Alberta	1976	126,029	1,774,122	1,868,778	5,197,440
	1977	94,836	2,121,976	2,243,351	6,195,413
	1978	95,071	2,249,446	2,339,920	6,528,512
British Columbia, Yukon and Northwest Territories	1976	85,781	1,615,950	1,698,728	4,654,861
	1977	81,303	1,728,269	1,805,687	4,953,619
	1978	81,877	1,849,749	1,954,886	5,348,886
Canada	1976	717,770	11,635,390	12,091,470	33,131,199
	1977	655,588	12,531,502	12,987,215	35,753,201
	1978	652,378	13,216,118	13,682,920	37,865,451
EMPLOYER					
Contractors	1976	580,049	9,493,438	9,831,163	27,101,453
	1977	515,152	9,974,981	10,300,349	28,558,664
	1978	508,711	10,445,734	10,774,668	29,981,187
Utilities	1976	60,320	1,042,859	1,134,088	3,059,496
	1977	65,750	1,309,533	1,426,031	3,856,620
	1978	70,826	1,483,820	1,596,245	4,437,564
Governments	1976	34,038	469,775	371,314	1,303,114
	1977	34,407	556,801	437,714	1,534,676
	1978	33,068	565,806	452,898	1,562,278
Miscellaneous	1976	43,363	629,318	754,905	1,667,136
	1977	40,279	690,187	823,121	1,803,241
	1978	39,773	720,758	859,109	1,884,422

*Actual expenditures 1976; preliminary actual 1977; intentions 1978.

9.14 Value of building permits issued, by province, 1977 and 1978 with totals for 1974-78 (thousand dollars)

Province or territory and year		Residential construction			Non-residential construction			Total
		New	Improvements	Total	Industrial	Commercial	Institutional and government	
Newfoundland	1977	47,880	6,241	54,121	10,677	52,148	11,105	128,051
	1978	41,308	7,761	49,069	4,451	23,958	31,677	109,155
Prince Edward Island	1977	34,958	5,136	40,094	11,229	7,949	9,689	68,961
	1978	34,457	5,402	39,859	8,219	10,125	31,969	90,172
Nova Scotia	1977	196,600	21,735	218,335	7,935	49,247	41,203	316,720
	1978	182,517	30,840	213,357	26,901	59,013	62,088	361,359
New Brunswick	1977	89,773	15,305	105,078	6,411	44,516	22,232	178,237
	1978	93,886	13,661	107,547	13,451	59,382	56,667	237,047
Quebec	1977	1,331,325	149,104	1,480,429	244,496	381,727	352,030	2,458,682
	1978	1,278,080	182,935	1,461,015	223,244	427,369	294,356	2,405,984
Ontario	1977	2,348,029	261,336	2,609,365	443,756	711,253	410,783	4,175,157
	1978	2,209,890	286,227	2,496,117	471,537	973,359	300,312	4,241,325
Manitoba	1977	242,453	19,551	262,004	25,629	66,447	45,146	399,226
	1978	269,384	22,245	291,629	23,353	93,180	62,643	470,805
Saskatchewan	1977	313,646	19,555	333,201	19,649	125,123	61,541	539,514
	1978	258,563	20,822	279,385	12,727	116,858	77,700	486,670
Alberta	1977	1,369,261	72,911	1,442,172	138,562	618,995	175,095	2,374,824
	1978	1,567,560	82,849	1,650,409	157,886	954,378	271,151	3,033,824
British Columbia	1977	962,318	87,662	1,049,980	103,453	384,431	213,424	1,751,288
	1978	862,647	94,944	957,591	108,875	410,424	178,438	1,655,328
Yukon	1977	4,844	197	5,041	18	1,201	1,351	7,611
	1978	12,712	675	13,387	2,200	8,614	4,366	28,567
Northwest Territories	1977	12,271	440	12,711	142	1,345	7,341	21,539
	1978	6,951	354	7,305	746	3,818	2,589	14,458
Total	1974	4,299,034	276,676	4,575,710	1,315,898	2,292,665	1,095,802	9,280,075
	1975	5,642,516	486,424	6,128,940	875,826	2,251,483	1,341,786	10,598,035
	1976	6,851,922	623,893	7,475,815	1,010,015	2,545,513	1,167,988	12,199,331
	1977	6,953,358	659,173	7,612,531	1,011,957	2,444,382	1,350,940	12,419,810
	1978	6,817,955	748,715	7,566,670	1,053,590	3,140,478	1,373,956	13,134,694

9.15 Estimated value of proposed construction as indicated by building permits issued in 50 municipalities, 1977 and 1978 (thousand dollars)

Province and municipality	1977	1978	Province and municipality	1977	1978
NEWFOUNDLAND			Oshawa	61,630	57,125
St. John's	58,723	48,200	Ottawa	152,239	147,925
PRINCE EDWARD ISLAND			Scarborough (borough)	297,787	339,177
Charlottetown	7,266	12,440	Thunder Bay	71,631	68,803
NOVA SCOTIA			Toronto	343,467	283,416
Halifax	74,584	66,042	Windsor	101,759	148,620
NEW BRUNSWICK			York (borough)	16,524	21,146
Fredericton	29,644	33,431	York North (borough)	196,976	278,250
Moncton	13,077	23,347	MANITOBA		
Saint John	34,647	37,852	Fort Garry	320,615	388,450
QUEBEC			St. Boniface		
LaSalle	9,438	24,437	St. James		
Montreal	328,960	198,288	Winnipeg		
Quebec	72,217	97,030	SASKATCHEWAN		
Ste-Foy	42,530	50,655	Moose Jaw	22,866	21,992
St-Laurent	11,769	17,542	Prince Albert	24,341	26,440
Sept-Îles	15,984	33,239	Regina	181,287	144,340
Sherbrooke	25,677	32,200	Saskatoon	162,916	153,603
Trois-Rivières	24,366	45,147	ALBERTA		
ONTARIO			Calgary	804,081	1,052,743
Brampton	161,900	133,497	Edmonton	600,946	723,222
Burlington	59,519	45,549	Jasper Place	56,642	56,151
Etobicoke (borough)	119,006	148,191	Lethbridge		
Hamilton	111,508	84,384	Medicine Hat		44,956
Kitchener	71,877	58,315	Red Deer	81,176	104,452
London	117,321	116,892	BRITISH COLUMBIA		
London Township	4,500	3,994	Burnaby District	113,804	81,242
Mississauga	262,734	246,191	Richmond Township	89,359	83,590
Nepean	66,636	56,078	Surrey District	109,654	114,709
			Vancouver	233,630	230,856
			Victoria	61,794	43,338

¹Metropolitan Corporation of Greater Winnipeg.

²Jasper Place included with Edmonton following annexation.

9.16 Estimated value of building permits issued in metropolitan areas, 1977 and 1978 (thousand dollars)

Metropolitan area	1977	1978	Metropolitan area	1977	1978
Calgary	804,081	1,052,743	Saint John	38,193	43,165
Chicoutimi-Jonquière	65,362	80,971	St. Catharines-Niagara	116,823	123,464
Edmonton	744,143	938,166	St. John's ¹	66,687	53,460
Halifax	167,307	154,858	Saskatoon	162,916	153,603
Hamilton	214,582	183,432	Sudbury	68,252	47,196
Kitchener	138,817	135,285	Thunder Bay	79,520	78,387
London	132,975	140,898	Toronto	1,659,256	1,770,014
Montreal	1,142,981	869,904	Vancouver	850,533	809,838
Oshawa	86,279	101,261	Victoria	162,664	143,372
Ottawa-Hull	418,570	398,816	Windsor	128,047	177,903
Quebec	312,526	365,488	Winnipeg	324,658	391,553
Regina	181,287	144,340			

¹Although this is a metropolitan area, only St. John's proper is included in the building permits survey.

9.17 Capital expenditures¹ on construction and on machinery and equipment, in current and constant (1971) dollars, 1970-79

Year	Capital expenditures (\$'000,000)		Machinery and equipment		Total		Capital expenditures as percentage of gross national expenditure ²	
	Construction							
	Current dollars	Constant 1971 dollars	Current dollars	Constant 1971 dollars	Current dollars	Constant 1971 dollars	Current dollars	Constant 1971 dollars
1970	11,319	11,962	6,479	6,673	17,798	18,635	21.0	21.4
1971	13,274	13,274	6,910	6,910	20,184	20,184	22.0	22.0
1972	14,470	13,690	7,748	7,552	22,218	21,242	21.9	21.9
1973	16,953	14,527	9,665	9,024	26,618	23,551	22.5	22.6
1974	20,771	14,975	12,111	9,952	32,882	24,927	23.2	23.0
1975	24,054	15,469	14,162	10,225	38,216	25,694	24.2	23.6
1976	28,144	16,259	15,492	10,468	43,636	26,727	23.4	22.8
1977	30,130	16,138	16,467	10,389	46,597	26,527	23.0	22.3
1978	32,261	16,155	17,977	10,237	50,238	26,392	22.6	21.5
1979	34,816	—	19,907	—	54,723	—	—	—

¹Actual expenditures 1970-77; preliminary actual 1978; intentions 1979.

²The percentage is calculated by dividing "Gross Fixed Capital Formation", as defined by the National Income and Expenditure Accounts, by the total "Gross National Expenditure".

9.18 Summary of capital and repair expenditures, by economic sector, 1977-79¹ (million dollars)

Type of enterprise and year		Capital			Repair			Capital and repair		
		Con-struction	Ma-chinery and equip-ment	Total	Con-struction	Ma-chinery and equip-ment	Total	Con-struction	Ma-chinery and equip-ment	Total
Agriculture and fishing	1977	607.4	2,388.9	2,996.3	245.2	449.7	694.9	852.6	2,838.6	3,691.2
	1978	718.6	2,772.5	3,491.1	288.9	506.0	794.9	1,007.5	3,278.5	4,286.0
	1979	807.1	2,969.9	3,777.0	319.9	550.8	870.7	1,127.0	3,520.7	4,647.7
Forestry	1977	105.0	115.5	220.5	45.2	173.8	219.0	150.2	289.3	439.5
	1978	103.9	131.9	235.8	48.5	190.1	238.6	152.4	322.0	474.4
	1979	114.4	145.5	259.9	52.6	194.4	247.0	167.0	339.9	506.9
Mining, quarrying and oil wells	1977	2,839.6	1,025.3	3,864.9	402.2	911.1	1,313.3	3,241.8	1,936.4	5,178.2
	1978	3,018.8	773.4	3,792.2	415.6	850.6	1,266.2	3,434.4	1,624.0	5,058.4
	1979	3,630.5	775.5	4,406.0	447.3	931.4	1,378.7	4,077.8	1,706.9	5,784.7
Construction industry	1977	131.2	689.1	820.3	18.2	526.4	544.6	149.4	1,215.5	1,364.9
	1978	141.7	745.4	887.1	19.6	572.6	592.2	161.3	1,318.0	1,479.3
	1979	152.3	800.5	952.8	21.9	630.2	652.1	174.2	1,430.7	1,604.9
Manufacturing	1977	1,658.9	4,421.8	6,080.7	530.5	2,685.3	3,215.8	2,189.4	7,107.1	9,296.5
	1978	1,674.7	4,565.1	6,239.8	545.2	2,836.5	3,381.7	2,219.9	7,401.6	9,621.5
	1979	1,630.0	5,167.9	6,797.9	595.6	3,029.5	3,625.1	2,225.6	8,197.4	10,423.0
Utilities	1977	5,073.4	4,114.5	9,187.9	904.5	2,043.8	2,948.3	5,977.9	6,158.3	12,136.2
	1978	5,791.2	4,909.8	10,701.0	991.1	2,286.6	3,277.7	6,782.3	7,196.4	13,978.7
	1979	6,332.5	5,419.5	11,752.0	1,101.2	2,468.9	3,570.1	7,433.7	7,888.4	15,322.1
Trade (wholesale and retail)	1977	362.9	757.8	1,120.7	124.1	178.0	302.1	487.0	935.8	1,422.8
	1978	350.1	755.8	1,105.9	121.5	175.4	296.9	471.6	931.2	1,402.8
	1979	368.9	829.0	1,197.9	122.6	184.6	307.2	491.5	1,013.6	1,505.1
Finance, insurance and real estate	1977	1,882.5	244.3	2,126.8	125.9	40.8	166.7	2,008.4	285.1	2,293.5
	1978	2,104.2	291.8	2,396.0	149.0	79.8	228.8	2,253.2	371.6	2,624.8
	1979	2,409.2	313.0	2,722.2	170.1	88.6	258.7	2,579.3	401.6	2,980.9
Commercial services	1977	359.5	1,727.6	2,087.1	51.4	255.0	306.4	410.9	1,982.6	2,393.5
	1978	400.0	2,005.3	2,405.3	63.3	264.0	327.3	463.3	2,269.3	2,732.6
	1979	502.2	2,497.2	2,999.4	68.3	287.8	356.1	570.5	2,785.0	3,355.5
Institutions	1977	1,179.7	334.5	1,514.2	238.3	74.4	312.7	1,418.0	408.9	1,826.9
	1978	1,190.8	360.7	1,551.5	234.4	91.6	326.0	1,425.2	452.3	1,877.5
	1979	1,395.7	387.6	1,783.3	243.6	95.0	338.6	1,639.3	482.6	2,121.9
Government departments	1977	4,865.3	648.0	5,513.3	927.0	158.0	1,085.0	5,792.3	806.0	6,598.3
	1978	5,391.8	665.8	6,057.6	914.7	167.8	1,082.5	6,306.5	833.6	7,140.1
	1979	5,758.3	601.5	6,359.8	923.4	179.5	1,102.9	6,681.7	781.0	7,462.7
Housing	1977	11,064.8	—	11,064.8	2,061.0	—	2,061.0	13,125.8	—	13,125.8
	1978	11,374.9	—	11,374.9	2,332.6	—	2,332.6	13,707.5	—	13,707.5
	1979	11,714.8	—	11,714.8	2,632.5	—	2,632.5	14,347.3	—	14,347.3
Total	1977	30,130.2	16,467.3	46,597.5	5,673.5	7,496.3	13,169.8	35,803.7	23,963.6	59,767.3
	1978	32,260.7	17,977.5	50,238.2	6,124.4	8,021.0	14,145.4	38,385.1	25,998.5	64,383.6
	1979	34,815.9	19,907.1	54,723.0	6,699.0	8,640.7	15,339.7	41,514.9	28,547.8	70,062.7

¹Actual expenditures 1977; preliminary actual 1978; intentions 1979.

9.19 Capital and repair expenditures for certain economic sectors, 1977-79¹ (million dollars)

Type of enterprise and year		Capital			Repair			Capital and repair		
		Con- struc- tion	Ma- chinery and equip- ment	Total	Con- struc- tion	Ma- chinery and equip- ment	Total	Con- struc- tion	Ma- chinery and equip- ment	Total
MANUFACTURING										
Food and beverages	1977	162.2	343.6	505.8	48.9	222.0	270.9	211.1	565.6	776.7
	1978	155.6	388.2	543.8	51.1	220.8	271.9	206.7	609.0	815.7
	1979	194.7	470.9	665.6	56.0	234.6	290.6	250.7	705.5	956.2
Tobacco products	1977	1.7	16.8	18.5	3.5	12.5	16.0	5.2	29.3	34.5
	1978	6.6	19.4	26.0	3.9	13.9	17.8	10.5	33.3	43.8
	1979	6.0	28.2	34.2	4.3	14.8	19.1	10.3	43.0	53.3
Rubber	1977	14.2	87.0	101.2	6.7	77.8	84.5	20.9	164.8	185.7
	1978	16.5	85.7	102.2	7.4	80.3	87.7	23.9	166.0	189.9
	1979	20.3	104.9	125.2	6.8	84.8	91.6	27.1	189.7	216.8
Leather	1977	2.7	9.7	12.4	1.8	7.3	9.1	4.5	17.0	21.5
	1978	4.2	7.5	11.7	2.1	8.6	10.7	6.3	16.1	22.4
	1979	3.5	9.0	12.5	2.1	8.8	10.9	5.6	17.8	23.4
Textiles	1977	16.0	60.5	76.5	12.1	50.4	62.5	28.1	110.9	139.0
	1978	16.2	76.8	93.0	12.3	50.5	62.8	28.5	127.3	155.8
	1979	12.7	82.7	95.4	12.8	56.3	69.1	25.5	139.0	164.5
Knitting mills	1977	0.9	8.8	9.7	1.1	4.4	5.5	2.0	13.2	15.2
	1978	1.2	9.2	10.4	1.1	4.5	5.6	2.3	13.7	16.0
	1979	1.1	10.0	11.1	1.3	4.6	5.9	2.4	14.6	17.0
Clothing	1977	5.0	16.0	21.0	1.5	6.7	8.2	6.5	22.7	29.2
	1978	8.2	17.3	25.5	2.3	5.8	8.1	10.5	23.1	33.6
	1979	7.7	17.9	25.6	2.2	6.4	8.6	9.9	24.3	34.2
Wood	1977	67.3	181.0	248.3	20.5	197.2	217.7	87.8	378.2	466.0
	1978	69.0	224.1	293.1	19.3	223.5	242.8	88.3	447.6	535.9
	1979	103.7	242.5	346.2	20.1	236.1	256.2	123.8	478.6	602.4
Furniture and fixtures	1977	8.6	12.3	20.9	3.6	8.9	12.5	12.2	21.2	33.4
	1978	6.0	10.3	16.3	3.0	6.8	9.8	9.0	17.1	26.1
	1979	7.2	10.5	17.7	3.2	6.9	10.1	10.4	17.4	27.8
Paper and allied industries	1977	181.4	586.4	767.8	40.4	481.2	521.6	221.8	1,067.6	1,289.4
	1978	120.7	574.9	695.6	44.5	522.7	567.2	165.2	1,097.6	1,262.8
	1979	90.1	636.2	726.3	52.7	552.0	604.7	142.8	1,188.2	1,331.0
Printing, publishing and allied industries	1977	16.5	89.2	105.7	7.5	27.0	34.5	24.0	116.2	140.2
	1978	21.3	101.1	122.4	8.0	27.4	35.4	29.3	128.5	157.8
	1979	23.3	114.2	137.5	7.6	28.5	36.1	30.9	142.7	173.6
Primary metals	1977	171.2	549.1	720.3	85.3	662.8	748.1	256.5	1,211.9	1,468.4
	1978	161.8	515.7	677.5	89.1	719.5	808.6	250.9	1,235.2	1,486.1
	1979	194.5	622.4	816.9	96.4	775.9	872.3	290.9	1,398.3	1,689.2
Metal fabricating	1977	46.5	151.5	198.0	18.1	113.6	131.7	64.6	265.1	329.7
	1978	51.6	168.1	219.7	18.6	106.4	125.0	70.2	274.5	344.7
	1979	41.6	185.5	227.1	19.6	114.3	133.9	61.2	299.8	361.0
Machinery	1977	31.3	100.6	131.9	18.0	41.6	59.6	49.3	142.2	191.5
	1978	33.2	102.8	136.0	17.4	38.3	55.7	50.6	141.1	191.7
	1979	45.5	135.6	181.1	18.7	39.8	58.5	64.2	175.4	239.6
Transportation equipment	1977	79.8	264.9	344.7	35.5	189.7	225.2	115.3	454.6	569.9
	1978	78.9	335.1	414.0	32.5	205.0	237.5	111.4	540.1	651.5
	1979	221.5	490.4	711.9	36.1	219.7	255.8	257.6	710.1	967.7
Electrical products	1977	24.6	106.2	130.8	13.3	59.4	72.7	37.9	165.6	203.5
	1978	15.6	109.6	125.2	13.3	59.8	73.1	28.9	169.4	198.3
	1979	15.6	127.9	143.5	13.4	61.6	75.0	29.0	189.5	218.5
Non-metallic mineral products	1977	63.3	215.5	278.8	16.1	169.5	185.6	79.4	385.0	464.4
	1978	63.6	202.5	266.1	17.0	170.7	187.7	80.6	373.2	453.8
	1979	69.3	247.6	316.9	18.7	189.3	208.0	88.0	436.9	524.9
Petroleum and coal products	1977	268.2	98.4	366.6	125.7	45.8	171.5	393.9	144.2	538.1
	1978	230.3	95.6	325.9	121.9	47.1	169.0	352.2	142.7	494.9
	1979	159.7	80.2	239.9	136.8	52.3	189.1	296.5	132.5	429.0
Chemical and chemical products ^a	1977	489.7	840.8	1,330.5	65.1	287.0	352.1	554.8	1,127.8	1,682.6
	1978	600.1	807.8	1,407.9	74.4	304.0	378.4	674.5	1,111.8	1,786.3
	1979	392.4	757.9	1,150.3	81.2	320.3	401.5	473.6	1,078.2	1,551.8
Miscellaneous	1977	7.8	37.4	45.2	5.8	20.5	26.3	13.6	57.9	71.5
	1978	14.1	40.6	54.7	6.0	20.9	26.9	20.1	61.5	81.6
	1979	19.6	48.2	67.8	5.6	22.5	28.1	25.2	70.7	95.9
Capital items charged to operating expenses	1977	—	646.1	646.1	—	—	—	—	646.1	646.1
	1978	—	672.8	672.8	—	—	—	—	672.8	672.8
	1979	—	745.2	745.2	—	—	—	—	745.2	745.2
Total, manufacturing	1977	1,658.9	4,421.8	6,080.7	530.5	2,685.3	3,215.8	2,189.4	7,107.1	9,296.5
	1978	1,674.7	4,565.1	6,239.8	545.2	2,836.5	3,381.7	2,219.9	7,401.6	9,621.5
	1979	1,630.0	5,167.9	6,797.9	595.6	3,029.5	3,625.1	2,225.6	8,197.4	10,423.0
MINING ^a										
Gold	1977	20.3	4.5	24.8	1.3	12.5	13.8	21.6	17.0	38.6
	1978	26.0	6.1	32.1	1.7	13.8	15.5	27.7	19.9	47.6
	1979	29.9	9.2	39.1	1.5	14.1	15.6	31.4	23.3	54.7
Iron	1977	265.8	185.1	450.9	18.8	225.1	243.9	284.6	410.2	694.8
	1978	101.7	50.5	152.2	20.9	182.2	203.1	122.6	232.7	355.3
	1979	122.0	43.5	165.5	29.8	213.5	243.3	151.8	257.0	408.8

9.19 Capital and repair expenditures for certain economic sectors, 1977-79^a (million dollars) (continued)

Type of enterprise and year	Capital			Repair			Capital and repair		
	Con- struction	Ma- chinery and equip- ment	Total	Con- struction	Ma- chinery and equip- ment	Total	Con- struction	Ma- chinery and equip- ment	Total
MINING^a (concluded)									
Copper-gold-silver	1977 107.7	74.2	181.9	14.1	136.5	150.6	121.8	210.7	332.5
	1978 84.9	51.4	136.3	14.7	147.0	161.7	99.6	198.4	298.0
	1979 102.2	70.3	172.5	16.3	155.3	171.6	118.5	225.6	344.1
Silver-lead-zinc	1977 53.9	23.1	77.0	5.8	32.3	38.1	59.7	55.4	115.1
	1978 46.2	25.4	71.6	5.1	37.3	42.4	51.3	62.7	114.0
	1979 56.6	28.3	84.9	5.7	41.3	47.0	62.3	69.6	131.9
Other metal mines ^a	1977 179.1	65.1	244.2	23.1	130.3	153.4	202.2	195.4	397.6
	1978 146.5	62.7	209.2	19.0	73.5	92.5	165.5	136.2	301.7
	1979 187.3	58.4	245.7	22.5	83.9	106.4	209.8	142.3	352.1
Asbestos	1977 66.4	37.3	103.7	7.5	73.1	80.6	73.9	110.4	184.3
	1978 60.8	36.3	97.1	13.0	83.1	96.1	73.8	119.4	193.2
	1979 66.8	40.4	107.2	13.9	88.0	101.9	80.7	128.4	209.1
Other non-metal mines ^a	1977 148.4	188.5	336.9	13.3	200.1	213.4	161.7	388.6	550.3
	1978 129.2	216.7	345.9	14.0	200.8	214.8	143.2	417.5	560.7
	1979 122.6	164.3	286.9	14.3	216.1	230.4	136.9	380.4	517.3
Petroleum and gas ^a	1977 1,998.0	447.5	2,445.5	318.3	101.2	419.5	2,316.3	548.7	2,865.0
	1978 2,423.5	324.3	2,747.8	327.2	112.9	440.1	2,750.7	437.2	3,187.9
	1979 2,943.1	361.1	3,304.2	343.3	119.2	462.5	3,286.4	480.3	3,766.7
Total, mining	1977 2,839.6	1,025.3	3,864.9	402.2	911.1	1,313.3	3,241.8	1,936.4	5,178.2
	1978 3,018.8	773.4	3,792.2	415.6	850.6	1,266.2	3,434.4	1,624.0	5,058.4
	1979 3,630.5	775.5	4,406.0	447.3	931.4	1,378.7	4,077.8	1,706.9	5,784.7
UTILITIES									
Transportation									
Air transport	1977 32.6	85.7	118.3	8.2	195.1	203.3	40.8	280.8	321.6
	1978 24.4	336.9	361.3	17.1	243.2	260.3	41.5	580.1	621.6
	1979 34.8	548.2	583.0	17.7	264.3	282.0	52.5	812.5	865.0
Railway transport	1977 367.5	160.1	527.6	416.3	571.0	987.3	783.8	731.1	1,514.9
	1978 382.2	186.3	568.5	429.5	636.5	1,066.0	811.7	822.8	1,634.5
	1979 470.6	261.4	732.0	477.1	662.9	1,140.0	947.7	924.3	1,872.0
Water transport and services	1977 68.4	146.5	214.9	23.9	81.8	105.7	92.3	228.3	320.6
	1978 66.0	148.7	214.7	21.3	86.3	107.6	87.3	235.0	322.3
	1979 80.9	159.5	240.4	22.5	91.1	113.6	103.4	250.6	354.0
Motor transport	1977 28.4	198.2	226.6	13.8	226.3	240.1	42.2	424.5	466.7
	1978 35.3	214.1	249.4	13.2	233.1	246.3	48.5	447.2	495.7
	1979 44.3	211.2	255.5	14.1	248.3	262.4	58.4	459.5	517.9
Urban transit systems	1977 162.3	173.8	336.1	31.4	80.2	111.6	193.7	254.0	447.7
	1978 141.6	166.1	307.7	37.3	92.5	129.8	178.9	258.6	437.5
	1979 161.9	149.8	311.7	41.4	102.1	143.5	203.3	251.9	455.2
Pipelines	1977 331.4	43.5	374.9	28.1	14.2	42.3	359.5	57.7	417.2
	1978 266.3	54.5	320.8	26.9	16.1	43.0	293.2	70.6	363.8
	1979 217.0	53.3	270.3	28.4	17.5	45.9	245.4	70.8	316.2
Capital items charged to operating expenses	1977 —	25.7	25.7	—	—	—	—	25.7	25.7
	1978 —	31.3	31.3	—	—	—	—	31.3	31.3
	1979 —	36.1	36.1	—	—	—	—	36.1	36.1
Total, transportation	1977 990.6	833.5	1,824.1	521.7	1,168.6	1,690.3	1,512.3	2,002.1	3,514.4
	1978 915.8	1,137.9	2,053.7	545.3	1,307.7	1,853.0	1,461.1	2,445.6	3,906.7
	1979 1,009.5	1,419.5	2,429.0	601.2	1,386.2	1,987.4	1,610.7	2,805.7	4,416.4
Communication									
Broadcasting ⁷	1977 56.7	100.8	157.5	8.9	12.9	21.8	65.6	113.7	179.3
	1978 56.8	88.4	145.2	9.8	14.1	23.9	66.6	102.5	169.1
	1979 54.0	81.0	135.0	10.3	14.5	24.8	64.3	95.5	159.8
Telephone and telegraph	1977 645.6	1,300.3	1,945.9	133.9	580.2	714.1	779.5	1,880.5	2,660.0
	1978 701.3	1,349.4	2,050.7	157.2	621.7	778.9	858.5	1,971.1	2,829.6
	1979 726.7	1,401.8	2,128.5	178.2	688.5	866.7	904.9	2,090.3	2,995.2
Capital items charged to operating expenses	1977 —	25.8	25.8	—	—	—	—	25.8	25.8
	1978 —	26.8	26.8	—	—	—	—	26.8	26.8
	1979 —	28.3	28.3	—	—	—	—	28.3	28.3
Total, communication	1977 702.3	1,426.9	2,129.2	142.8	593.1	735.9	845.1	2,020.0	2,865.1
	1978 758.1	1,464.6	2,222.7	167.0	635.8	802.8	925.1	2,100.4	3,025.5
	1979 780.7	1,511.1	2,291.8	188.5	703.0	891.5	969.2	2,214.1	3,183.3
Miscellaneous utilities	1977 39.2	38.1	77.3	11.2	18.2	29.4	50.4	56.3	106.7
Grain elevators	1978 40.3	48.7	89.0	10.2	15.8	26.0	50.5	64.5	115.0
	1979 34.7	44.9	79.6	10.6	18.5	29.1	45.3	63.4	108.7
Electric power	1977 3,158.1	1,725.6	4,883.7	194.0	242.5	436.5	3,352.1	1,968.1	5,320.2
	1978 3,881.8	2,153.5	6,035.3	229.3	304.6	533.9	4,111.1	2,458.1	6,569.2
	1979 4,300.8	2,335.7	6,636.5	259.5	337.0	596.5	4,560.3	2,672.7	7,233.0
Gas distribution	1977 158.1	54.9	213.0	28.1	11.5	39.6	186.2	66.4	252.6
	1978 176.3	61.3	237.6	29.1	11.4	40.5	205.4	72.7	278.1
	1979 188.6	61.4	250.0	29.6	11.7	41.3	218.2	73.1	291.3
Other utilities ^a	1977 25.1	8.3	33.4	6.7	9.9	16.6	31.8	18.2	50.0
	1978 18.9	9.8	28.7	10.2	11.3	21.5	29.1	21.1	50.2
	1979 18.2	10.2	28.4	11.8	12.5	24.3	30.0	22.7	52.7

9.19 Capital and repair expenditures for certain economic sectors, 1977-79¹ (million dollars) (concluded)

Type of enterprise and year	Capital			Repair			Capital and repair		
	Con- struc- tion	Ma- chinery and equip- ment	Total	Con- struc- tion	Ma- chinery and equip- ment	Total	Con- struc- tion	Ma- chinery and equip- ment	Total
UTILITIES (concluded)									
Capital items charged to operating expenses	1977	—	27.2	27.2	—	—	—	27.2	27.2
	1978	—	34.0	34.0	—	—	—	34.0	34.0
	1979	—	36.7	36.7	—	—	—	36.7	36.7
Total, miscellaneous utilities	1977	3,380.5	1,854.1	5,234.6	240.0	282.1	522.1	3,620.5	5,756.7
	1978	4,117.3	2,307.3	6,424.6	278.8	343.1	621.9	4,396.1	7,046.5
	1979	4,542.3	2,488.9	7,031.2	311.5	379.7	691.2	4,853.8	7,722.4
Total, utilities	1977	5,073.4	4,114.5	9,187.9	904.5	2,043.8	2,948.3	5,977.9	12,136.2
	1978	5,791.2	4,909.8	10,701.0	991.1	2,286.6	3,277.7	6,782.3	13,978.7
	1979	6,332.5	5,419.5	11,752.0	1,101.2	2,468.9	3,570.1	7,433.7	15,322.1

¹Actual expenditures 1977; preliminary actual 1978; intentions 1979.²Includes expenditures for heavy water plants.³Capital construction expenditures include on-property exploration and development but exclude outside or general exploration.⁴Includes capital and repair expenditures for metal and non-metal exploration companies.⁵Includes coal mines, gypsum, salt, potash and miscellaneous non-metal mines, and quarrying.⁶Includes expenditures on facilities related to petroleum and gas wells and extraction of petroleum from shales or sands, natural gas processing plants and contract drilling for petroleum and gas.⁷Includes community antenna television and satellite communication systems.⁸Includes toll highways and bridges, warehousing, water systems of private and provincial enterprises and other utilities.

9.20 Capital and repair expenditures, by province, 1977-79^{1,2} (million dollars)

Province or territory and year	Capital			Repair			Capital and repair		
	Con- struc- tion	Ma- chinery and equip- ment	Total	Con- struc- tion	Ma- chinery and equip- ment	Total	Con- struc- tion	Ma- chinery and equip- ment	Total
Newfoundland	1977	511.7	200.1	711.8	111.5	197.3	308.8	623.2	1,020.6
	1978	554.2	225.2	779.4	109.8	173.9	283.7	664.0	1,063.1
	1979	714.4	293.6	1,008.0	123.7	205.2	328.9	838.1	1,336.9
Prince Edward Island	1977	86.0	44.5	130.5	32.6	16.5	49.1	118.6	179.6
	1978	118.4	45.8	164.2	26.4	18.8	45.2	144.8	209.4
	1979	122.3	48.6	170.9	28.4	19.7	48.1	150.7	219.0
Nova Scotia	1977	726.8	313.7	1,040.5	187.9	181.4	369.3	914.7	1,409.8
	1978	799.2	404.1	1,203.3	216.6	203.3	419.9	1,015.8	1,623.2
	1979	844.0	412.9	1,256.9	222.8	216.1	438.9	1,066.8	1,695.8
New Brunswick	1977	737.5	417.4	1,154.9	136.4	152.9	289.3	873.9	1,444.2
	1978	783.7	489.2	1,272.9	138.1	178.6	316.7	921.8	1,589.6
	1979	824.7	501.3	1,326.0	152.8	194.9	347.7	977.5	1,673.7
Quebec	1977	2,237.2	3,465.1	10,702.3	1,353.1	1,620.2	2,973.3	8,590.3	13,675.6
	1978	2,272.3	3,723.1	10,995.4	1,463.9	1,677.3	3,141.2	8,736.2	14,136.6
	1979	2,583.3	4,060.9	11,644.2	1,615.9	1,801.0	3,416.9	9,199.2	15,061.1
Ontario	1977	8,724.5	6,007.7	14,732.2	1,889.0	2,788.7	4,677.7	10,613.5	19,409.9
	1978	8,863.6	6,512.7	15,376.3	2,050.9	2,985.0	5,035.9	10,914.5	20,412.2
	1979	9,518.1	7,405.3	16,923.4	2,240.2	3,223.7	5,463.9	11,758.3	22,387.3
Manitoba	1977	1,148.9	748.4	1,897.3	248.8	309.8	558.6	1,397.7	2,455.9
	1978	1,269.0	789.9	2,058.9	263.3	329.7	593.0	1,532.3	2,651.9
	1979	1,253.6	820.2	2,073.8	292.5	350.5	643.0	1,546.1	2,716.8
Saskatchewan	1977	1,314.1	955.2	2,269.3	250.1	325.2	575.3	1,564.2	2,844.6
	1978	1,392.2	1,050.1	2,442.3	271.0	358.0	629.0	1,663.2	3,071.3
	1979	1,546.9	1,110.2	2,657.1	293.8	381.6	675.4	1,840.7	3,332.5
Alberta	1977	5,395.1	2,430.7	7,825.8	729.4	738.3	1,467.7	6,124.5	9,293.5
	1978	6,580.6	2,679.5	9,260.1	807.2	848.1	1,655.3	7,387.8	10,915.4
	1979	7,430.9	2,892.3	10,323.2	885.3	921.1	1,806.4	8,316.2	12,129.6
British Columbia	1977	3,784.7	1,808.6	5,593.3	708.0	1,121.4	1,829.4	4,492.7	7,422.7
	1978	4,225.6	1,950.4	6,176.0	750.8	1,199.3	1,950.1	4,976.4	8,126.1
	1979	4,555.6	2,221.9	6,777.5	816.6	1,277.1	2,093.7	5,372.2	8,871.2
Yukon and Northwest Territories	1977	463.7	75.9	539.6	26.7	44.6	71.3	490.4	610.9
	1978	401.9	107.5	509.4	26.4	49.0	75.4	428.3	584.8
	1979	422.1	139.9	562.0	27.0	49.8	76.8	449.1	638.8
Canada	1977	30,130.2	16,467.3	46,597.5	5,673.5	7,496.3	13,169.8	35,803.7	59,767.3
	1978	32,260.7	17,977.5	50,238.2	6,124.4	8,021.0	14,145.4	38,385.1	64,383.6
	1979	34,815.9	19,907.1	54,723.0	6,699.0	8,640.7	15,339.7	41,514.9	70,062.7

¹Actual expenditures 1977; preliminary actual 1978; intentions 1979.²Capital expenditures on machinery and equipment include an estimate for "capital items charged to operating expenses", in the manufacturing, utilities and trade totals.

9.21 Value of construction work performed, by type of structure, 1976-78: (thousand dollars)

Type of structure	1976			1977			1978		
	New	Repair	Total	New	Repair	Total	New	Repair	Total
BUILDING CONSTRUCTION									
Residential	10,852,532	1,816,814	12,669,346	10,931,954	2,018,674	12,950,628	11,343,871	2,240,365	13,584,236
Industrial	1,042,050	408,052	1,450,102	1,248,912	403,522	1,652,434	1,052,745	426,286	1,479,031
Factories, plants, workshops and food canneries	818,971	319,007	1,137,978	1,014,085	305,748	1,319,833	930,587	321,529	1,252,116
Mine and mine mill buildings	186,246	47,441	233,687	203,762	57,028	260,790	77,245	36,433	113,678
Railway stations and roadway buildings	22,821	24,745	47,566	20,637	24,914	45,551	31,130	29,702	60,832
Railway shops, engine houses, water and fuel stations	14,012	16,859	30,871	10,428	15,832	26,260	13,783	18,622	32,405
Commercial	3,181,718	446,042	3,627,760	3,011,454	434,124	3,445,578	3,100,945	453,710	3,554,655
Warehouses, storehouses and refrigerated storage	336,025	50,991	387,016	374,770	51,645	426,415	384,650	51,213	435,863
Hotels, clubs, restaurants, cafeterias and tourist cabins	24,456	9,084	33,540	38,776	11,598	50,374	49,325	11,901	61,226
Office buildings	163,339	32,349	195,688	170,533	27,986	198,519	151,688	77,889	229,577
Stores, retail and wholesale	1,433,519	172,267	1,605,786	1,402,083	173,212	1,575,295	1,333,552	191,476	1,524,728
Garages and service stations	588,748	102,552	691,300	624,775	91,895	716,670	733,331	90,803	824,134
Theatres, arenas, amusement and recreational buildings	139,741	54,737	194,478	151,764	57,943	209,707	184,698	59,290	243,988
Laundries and dry-cleaning establishments	494,048	22,589	516,637	245,793	18,465	264,258	261,732	19,750	281,482
Institutional	1,379,028	1,473	1,380	2,960	1,380	4,340	2,269	1,388	3,657
Schools and other education buildings	735,165	110,193	845,358	780,870	129,776	910,646	816,187	233,439	1,049,626
Churches and other religious buildings	39,357	13,036	52,393	30,391	11,462	41,853	29,105	11,920	41,025
Hospitals, sanatoria, clinics and first-aid stations	366,063	59,729	425,792	341,375	67,993	409,368	388,392	67,219	455,611
Other	238,443	32,485	270,928	267,478	33,175	300,653	231,862	32,649	264,511
Other building	891,189	238,797	1,129,986	967,809	262,622	1,230,431	1,037,445	281,928	1,319,373
Farm buildings (excl. dwellings)	346,319	138,111	484,430	400,006	159,359	559,365	435,236	171,259	606,495
Broadcasting, radio and television, relay and booster stations, and telephone exchanges	140,656	21,070	161,726	144,315	22,937	167,252	163,130	25,193	188,323
Aircraft hangars	17,899	9,079	26,978	28,526	9,070	37,596	26,731	38,603	65,334
Passenger terminals, bus, boat, air and other	115,908	7,079	122,987	113,809	8,915	122,724	130,222	8,787	139,009
Armouries, barracks and drill halls	11,560	19,123	30,683	11,480	19,304	30,784	12,303	20,530	32,833
Bunkhouses, dormitories, camp cookeries, bush depots and camps	29,740	11,023	40,763	19,300	8,332	27,632	18,495	9,066	27,561
Laboratories	40,745	7,559	48,304	41,135	5,961	47,096	47,393	6,873	54,266
Other	188,362	25,753	214,115	209,238	28,744	237,982	203,935	30,349	234,284
Total, building construction	17,346,517	3,125,148	20,471,665	17,580,243	3,361,348	20,941,591	18,000,552	3,655,728	21,656,280
ENGINEERING CONSTRUCTION									
Marine	118,651	52,622	171,273	145,047	55,685	200,732	161,291	59,145	220,436
Docks, wharves, piers and breakwaters	54,655	28,135	82,790	84,260	25,512	109,772	95,958	28,699	124,657
Retaining walls, embankments and riprapping	12,333	2,891	15,224	8,513	2,616	11,129	9,341	2,744	12,085
Canals and waterways	14,178	6,464	20,642	13,502	8,830	22,332	19,388	9,554	28,942
Dredging and pile driving	5,672	10,047	15,719	7,644	11,659	19,303	8,584	11,865	20,449
Dike construction	21,103	1,190	22,293	16,662	1,076	17,738	15,428	1,252	16,680
Logging booms	701	750	1,451	488	1,210	1,698	818	1,061	1,879
Other	118,909	3,145	122,054	13,978	4,782	18,760	11,774	3,970	15,744

9.21 Value of construction work performed, by type of structure, 1976-78¹ (thousand dollars) (concluded)

Type of structure	1976			1977			1978		
	New	Repair	Total	New	Repair	Total	New	Repair	Total
Other engineering	1,964,632	212,907	2,177,539	2,146,701	257,512	2,404,213	2,092,028	275,795	2,367,823
Bridges, trestles, culverts, overpasses and viaducts	259,398	47,943	307,341	279,106	54,969	334,075	299,540	59,862	359,402
Tunnels and subways	105,162	2,201	107,363	89,448	2,533	91,981	85,732	2,191	87,923
Incinerators	3,132	2,559	4,091	3,702	915	4,617	4,313	1,002	5,315
Park systems, landscaping and sodding	71,577	23,099	94,676	84,331	26,471	110,802	102,428	25,891	128,319
Swimming pools, tennis courts and outdoor recreation facilities									
Mine shafts and other below surface workings	26,031	2,888	28,919	38,053	2,181	40,234	52,937	2,367	55,304
Fences, snowsheds, signs and guard rails	400,546	4,883	405,429	397,929	3,465	401,394	386,220	4,153	390,373
Other engineering	75,896	52,005	127,901	87,985	54,685	142,670	94,697	56,325	151,022
Total, engineering construction	1,022,890	78,929	1,101,819	1,166,147	112,293	1,278,440	1,066,161	124,004	1,190,165
Total, all construction	10,798,423	1,861,111	12,659,534	12,688,989	2,122,621	14,811,610	13,912,207	2,296,964	16,209,171
Total, all expenditures	28,144,940	4,986,259	33,131,199	30,269,232	5,483,969	35,753,201	31,912,759	5,952,692	37,865,451

¹Actual expenditures 1976; preliminary actual 1977; intentions 1978.*Sources*

- 9.1 - 9.2 Canada Mortgage and Housing Corporation.
 9.3 - 9.8 Housing and Social Characteristics, Social Statistics, Field, Statistics Canada.
 9.9 - 9.10 Consumer Income and Expenditure Division, Social Statistics Field, Statistics Canada.
 9.11 - 9.21 Construction Division, Economic Statistics Field, Statistics Canada.

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Forests, fish and fur-bearing animals were sources of shelter, food and clothing from the time of earliest habitation in what is now Canada. Development of these resources and the industries resulting from their use have played a continuing role in Canada's growth. Production from agricultural lands is treated separately in Chapter 11 Agriculture, and the generation of electricity from waterfalls, which could be considered among renewable resources, is described in Chapter 13 Energy.

Canada is a major exporter of forest products. Exports of wood, wood products and paper in 1978 amounted to \$9.6 billion which was 19% of the value of all commodity exports. Paper and paperboard constituted 36% of all forest products exports; newsprint alone accounted for 30%.

The Canadian fishing industry also had a bonanza year in 1978, becoming the world's largest fish exporter when the value of its exports reached \$1.1 billion compared to \$818 million in 1977. Total landings on the Atlantic Coast were well over 1.0 million tonnes, with a huge increase in the cod catch. On the Pacific Coast, although herring landings decreased and salmon landings remained about the same as in 1977, the landed value of herring and salmon increased 75% and 45% respectively. Further details are given in Tables 10.14 -10.16.

In the fur industry, Canada's exports of finished furs in 1978 rose by 50% over the previous year to \$72 million. Exports to the United States accounted for \$19 million, an increase of almost 150%. Domestic sales reached a record level of \$206 million.

Forestry

10.1

The forest land area of Canada bears largely coniferous forests and makes up 37% of the total land area; of this forest land area, little more than 3% is reserved — parks and military areas where, by law, it is not available for growing and harvesting forest crops. In 1978, 156 million cubic metres of roundwood were cut. Timber harvesting and processing generated work for 300,000 persons with \$5 billion in salaries and wages. The value added by processing beyond the raw materials stage amounted to \$9.8 billion which was 17.8% of the value added of all goods-producing industries.

British Columbia, Ontario and Quebec are the leading timber-producing provinces. In 1978 British Columbia sawmills produced 66% of all lumber in Canada and most of the sulphate pulp and softwood plywood. Ontario and Quebec produced most of the groundwood pulp and hardwood plywood.

There is a growing awareness of the importance of the forest in recreation, wildlife habitat and stream flow regulation. Recognition of these values is fostering a broader concept of forestry.

Forest resources

10.1.1

Forest regions

10.1.1.1

Forests cover a vast area in the north temperate zone but wide variations in physiography, soil and climate cause marked differences. Hence, eight fairly well-defined forest regions can be recognized. By far the largest is the boreal region which represents 82% of total forested area. The Great Lakes–St. Lawrence region covers 6.5% and the subalpine region 3.7%. The montane, coast, and Acadian regions each account for approximately 2% while the remaining Columbia and deciduous regions each represent less than 1%.

Boreal forest region. This region forms a continuous belt from Newfoundland and the coast of Labrador west to the Rocky Mountains and northwest to Alaska. White spruce and black spruce are characteristic; other prominent conifers are tamarack, which ranges throughout, balsam fir and jack pine in the eastern and central portions, and alpine fir and lodgepole pine in the west and northwest. Although boreal forests are primarily

coniferous there is a general admixture of deciduous trees such as white birch and poplar in the central and south-central portions and particularly along the edge of the prairie. The proportion of spruce and larch increases to the north and, with the more rigorous climate, the close forest gives way to an open lichen-woodland which finally changes into tundra. In the eastern section, along the southern border of the region, there is an intermixture of species from the Great Lakes-St. Lawrence forest: eastern white pine, red pine, yellow birch, sugar maple, black ash and eastern white cedar.

Great Lakes-St. Lawrence forest region. Extending inland from the Great Lakes and the St. Lawrence River lies a mixed forest of eastern white pine, red pine, eastern hemlock and yellow birch. Certain dominant broad-leaved species common to a deciduous forest region include sugar maple, red maple, red oak, basswood and white elm. Other species are the eastern white cedar and largetooth aspen and, to a lesser extent, beech, white oak, butternut and white ash. Boreal species such as white spruce, black spruce, balsam fir, jack pine, poplar and white birch are intermixed, and red spruce is abundant in certain parts. This region extends westward into southeastern Manitoba but does not include the area north of Lake Superior.

Subalpine forest region. This is coniferous forest on the mountain uplands of Alberta and British Columbia, from the Rocky Mountains through interior British Columbia to Pacific inlets. Characteristic species are Engelmann spruce, alpine fir and lodgepole pine. There is a close relationship between subalpine and boreal regions, which also has black spruce, white spruce and trembling aspen. There is some penetration of interior Douglas fir from the montane forest, and western hemlock, western red cedar and amabilis fir from coastal forests. Other species are western larch, whitebark pine, limber pine and, on the Coast Mountains, yellow cypress and mountain hemlock.

Montane forest region. The region occupies a large part of the interior uplands of British Columbia, part of the Kootenay Valley and a small area on the east side of the Rocky Mountains. It is an extension of the typical forest of the western mountain system in the United States. Ponderosa pine is characteristic in the south. Douglas fir is found throughout but particularly in the central and southern parts, and lodgepole pine and trembling aspen are general, the latter particularly in the north-central area. Engelmann spruce, alpine fir and white birch are found in the north. White spruce, although primarily boreal, also grows here. Prairie bunch grasses and herbs grow in many river valleys.

Coast forest region. This is part of the Pacific Coast forest of North America. Essentially coniferous, it consists of western red cedar, western hemlock, Sitka spruce in the north and Douglas fir in the south. Amabilis fir and yellow cypress grow throughout the region and, with mountain hemlock and alpine fir, are common at higher altitudes. Western white pine is found in the south, and western yew in widely scattered groups. Deciduous trees, such as black cottonwood, red alder and bigleaf maple, have a limited distribution. Arbutus, a broad-leaved evergreen, and Garry oak grow on the southeast coast of Vancouver Island, the adjacent islands and mainland. Both species are predominantly southward in the United States.

Acadian forest region. This covers the greater part of the Maritime provinces. Red spruce is characteristic but not exclusive. Associated with it are balsam fir, yellow birch and sugar maple, with some red pine, eastern white pine, jack pine and eastern hemlock. Beech, formerly important, has been drastically reduced in Nova Scotia, Prince Edward Island and southern New Brunswick by beech bark disease. Abundant species are white spruce, black spruce, red oak, white elm, black ash, red maple, white birch, grey birch and poplars. Eastern white cedar is present in New Brunswick but rare elsewhere.

Columbia forest region. A large part of the Kootenay Valley, the upper valleys of the Thompson and Fraser rivers and the Quesnel Lake area of British Columbia contains a coniferous forest region, closely resembling the coast forest region. Western red cedar and western hemlock are characteristic in this interior wet belt. The interior Douglas fir has general distribution; western white pine, western larch, grand fir and western yew are found in southern parts. Engelmann spruce from the subalpine forest region grows

in the upper Fraser Valley and to some extent at upper levels in the rest of the region. At lower elevations the forest merges with the montane forest region and in places borders directly on grassland.

Deciduous forest region. Northern limits of the deciduous forest, widespread in the United States, extend into southwestern Ontario between lakes Huron, Erie and Ontario. Here, with trees common to the Great Lakes–St. Lawrence forest region, such as sugar maple, beech, white elm, basswood, red ash, white oak and butternut, are scattered other deciduous species. These include the tulip tree, cucumber tree, pawpaw, red mulberry, Kentucky coffee tree, redbud, black gum, blue ash, sassafras, mockernut hickory, pignut hickory, black oak and pin oak. Black walnut, sycamore and swamp white oak are confined largely to this region. Conifers are few but there is scattered distribution of eastern white pine, tamarack, eastern red cedar and eastern hemlock.

Grasslands. Although not a forest region, the prairies of Manitoba, Saskatchewan and Alberta support several species of trees. Trembling aspen forms groves around wet depressions and continuous dense stands along the northern boundary. Several other species of poplar grow along rivers and in moist locations, along with willows and some white spruce. There are sporadic stands of white birch, Manitoba maple, bur oak and ash. In British Columbia, where grasslands are confined to deep valleys and low areas of the interior, there are scattered ponderosa pine, birch, poplar, spruce and mountain alder.

Forest land

10.1.1.2

Inventories of Canadian forest resources are made periodically by provincial forest authorities and, with their co-operation, the Canadian Forestry Service of Environment Canada compiles national statistics.

The 1976 national forest inventory reported in detail on an area of 3.4 million square kilometres (km²) of forest land (Table 10.1). Of this total, 96 000 km² are reserved by law for uses other than timber production. Currently, almost 100% of the production forest land of Canada has been inventoried.

Provincial Crown forest land constitutes 83% of the production forest land of Canada, leaving 11% under federal jurisdiction and 6% in private ownership. Although precise use of private forest land is a matter of speculation, individual studies and limited statistics suggest that wood production still predominates despite a tendency to convert some of this land to recreational use.

The estimates of wood volume of timber, given in Table 10.1, are also subject to constant revision as more accurate and complete inventories are compiled. The volumes reported in the 1976 national forest inventory are only about 1% larger than those reported previously even though estimates for Labrador, Yukon and Northwest Territories were included. The reasons for this include: more specific definitions than were used previously, more recent provincial forest inventories, and estimates of wood volume based only on productive forest land. The estimates, however, are low because British Columbia has adopted procedures whereby data on volume of mature timber only were compiled.

Land use

10.1.1.3

The lands directorate of Environment Canada investigates national aspects of land use in terms of management, research, planning and environmental concerns. The directorate provides the leadership for an interdepartmental task force on land-use policy. The task force has prepared a federal policy on land use that provides guidelines to federal agencies for their policies and programs.

Research programs have focused on trends and factors affecting land use. A map folio has been produced to define, locate and describe Canada's lands in terms of agriculture, forestry, recreation, wildlife, urban growth and energy, in the form of a national perspective. Land problems have been analyzed and publications have been produced on such topics as foreign ownership legislation in Prince Edward Island and the impact of British Columbia's agricultural land reserves. Other research programs include a study of the relationship between Canada's best agricultural lands and the

urban pressures upon them, and land despoliation and reclamation with reference to mining in Canada.

The directorate represents Environment Canada on the Treasury Board advisory committee on federal land management and provides environmental advice and policy on federal land transaction proposals, particularly those in rural areas. Approximately 400 transactions are processed annually by this committee as well as a range of policy considerations and reviews.

The directorate played the lead federal role in the federal-provincial agreement to conduct baseline environmental studies in Northern Quebec. This agreement, commonly known as the James Bay environmental studies, ended on March 31, 1979. The directorate is also involved in the negotiation of native land claims in Canada.

The directorate operates a number of mapping programs. The largest is the Canada Land Inventory (CLI). Under federal-provincial agreement, all settled lands of Canada have been classified according to their capabilities for agriculture, forestry, recreation, wildlife, sportfish and present land use (circa 1967). These data, widely used for land-use planning at the regional level, have been placed in a computer system known as the Canada Geographic Information System (CGIS), enabling the production of statistics on land capability at the national level. In response to the need for other mapping techniques for those areas not covered by the CLI program, an ecological land classification system has been developed and applied in the James Bay area. A northern land-use information mapping program provides information regarding current land-use patterns and activities at a reconnaissance scale of 1:250,000 for Yukon and Northwest Territories. A program to monitor land-use change throughout Canada is under development.

The directorate provides a secretarial service and plays an active role in a committee on ecological (biophysical) land classification. This federal-provincial committee is developing a national ecological land classification system.

The directorate operates the Canada land data system (CLDS), a computerized system that stores and analyzes comprehensive, multi-disciplinary land resource data. The analytical capabilities of the system are available to resource managers and planners at cost. Regional use is possible through liaison officers and interactive terminals in various land regional offices in Halifax, Quebec City, and Burlington, as well as the University of Manitoba and the Alberta Remote Sensing Centre in Edmonton. Pilot studies testing the feasibility of mapping and incorporating federal property data into the CLDS are under way.

10.1.2 Forest depletion

The average annual forest utilization by cutting is shown in Table 10.2. The primary sources of Canada's current wood production are the areas of production Crown forest land (provincial and federal) and private forest land that are classed as productive. These ownerships constitute 163.8 million hectares (ha). On a volume basis, it was estimated in 1977 that the annual allowable cut to maintain productive forests was 276 million cubic metres (m³). From 1972-76, the average annual total of wood harvested amounted to about 132 million cubic metres, approaching half the allowable cut. In addition to cutting, extensive forest depletion is caused by fire, insects, diseases and natural mortality but no reliable estimates of these losses, either physical or economic, are available. A total of 8,960 forest fires occurred across Canada in 1977 (Table 10.3).

A surplus of timber exists in Canada although there are shortages in some regions and species which could be overcome by more intensive forest management and silvicultural techniques. Greater utilization of individual trees and of certain species could extend the resource. The estimates of wood volume in Table 10.1 include over 2 billion cubic metres on 375 000 km² of forest land reported as economically inaccessible.

10.1.3 Forest administration

10.1.3.1 Federal forestry programs

The provinces own 90% of the forests in their boundaries that are not reserved for special purposes such as national parks. The federal government owns or administers

about 85 million hectares, but most of this land is in Yukon and Northwest Territories and is largely unsuitable for commercial timber production. Federal ownership in the provinces is only about 800,000 ha and most of this is in national parks.

The BNA Act specifies that the provinces have direct responsibility for management of “public lands belonging to the province and the timber and wood thereon”. The federal government has major or shared jurisdiction over many policies and activities critical to the wise management and use of Canada’s forest resources: fiscal management, regional development, industrial efficiency, research and development, trade and tariffs, transportation and environment. At least six federal departments have a major interest in forestry.

Canadian forestry service. The principal federal agency is the Canadian forestry service of Environment Canada, which operates primarily under the Forestry Development and Research Act. Its objective is to promote the management and use of Canada’s forest resources, through headquarters attention to forest policy and economics, and research and operational programs conducted by two national forestry institutes and six regional forest research centres. Areas of activity include: forest protection, forest management, tree improvement, forest statistics and the environmental aspects of forestry.

The Canadian forestry service underwrites about half the cost of the two private research organizations. Forintek develops, processes and preserves solid wood products. The Forest Engineering Research Institute of Canada (FERIC) develops better and cheaper methods of harvesting wood.

Other federal agencies. The regional economic expansion department promotes job opportunities and income improvement in the poorer parts of Canada. Since economic opportunities in much of rural Canada lie largely in the forestry sector, the department helps underwrite provincial programs in forest management and access road development via forestry under umbrella general development agreements.

The energy, mines and resources department becomes involved in forestry through its responsibility for plans and policies relating to energy, and for the Canada Centre for Remote Sensing (CCRS). Wood and mill waste has potential for energy development, and CCRS is engaged in research on remote sensing technology, which has innumerable applications in forestry.

The Indian and northern affairs department manages the forest lands in Yukon and Northwest Territories and on Indian reservations. The resource industries branch of the industry, trade and commerce department promotes the growth and efficiency of the Canadian forest industry and the sale of Canadian forest products abroad. The employment and immigration commission provides training courses in logging, scaling and forest management. The agriculture department is involved in forestry through promotion of the production and sale of maple syrup, the work of the Biosystematics Research Institute on the identification of forest insects and diseases, the use of foliage and wood for animal fodder, the plant quarantine division’s survey control programs on introduced forest insects and diseases and the plant products division control of the registration and use of pesticides.

Provincial forestry programs

10.1.3.2

All provincial forest land with the exception of minor portions in national parks, federal forest experiment stations, military areas and Indian reserves (except in Newfoundland) is administered by the respective provincial governments. The forestry program of each is outlined below.

Newfoundland. The forest resources of this province are geographically separated by the Strait of Belle Isle into two distinct regions — the island of Newfoundland and Labrador on the mainland. A forest inventory of Labrador, completed in 1975, was conducted on lands south of 56°N. The inventoried area disclosed a total of 258 012 km² of which 55 374 km² were productive forest area; the total volume of black spruce and balsam fir in Labrador was 320.7 million cubic metres. A forest inventory of the island of Newfoundland showed that of a total area of 111 445 km², over 37 863 km² were

classified as productive forest. This area supports a total gross volume of 281.8 million cubic metres of softwoods and hardwoods. The principal commercial species of trees are black spruce and balsam fir. White pine, white spruce, and white and yellow birch are of lesser commercial importance.

On the island 60% of the productive forest lands has been licensed, leased, or is owned by the pulp and paper industry while 37% remains under the direct jurisdiction of the province. Tenure of the remaining 3% is varied and includes federal and provincial parks. Forest inventories are conducted over a 10-year cycle, with the current one to be completed and a new one started in 1985.

Responsibility and authority over Crown forests in the province are vested in the forestry branch of the forestry and agriculture department. The branch employs more than 200 professional, technical and support staff. In four regions of the province 19 management units undertake the operational field work of forest protection, timber surveys, permits, enforcement, scaling, silviculture and forest management. Headquarters at St. John's is responsible for planning and program development. A new forest policy of increased utilization on a sustained yield basis, backed by legislation and intensified forest management, is being implemented following a study of all aspects of forests in the province.

The legislation requires every owner of 120 ha or more of forest land either to submit a plan for certification utilizing the annual sustainable yield of such land or to pay a high tax on the basis of unmanaged land. Limit holders are also being assessed an annual tax for managed land on the basis of area held.

The province's forest resource is primarily used to produce newsprint and lumber. Two newsprint mills, one at Grand Falls and the other at Corner Brook, have a combined production capacity of approximately 1 860 t (tonnes) a day. A third newsprint mill, at Stephenville, with a capacity of 150 000 t annually, is expected to go on stream in 1981. There is also a growing sawmill industry producing about half of the province's lumber requirements. This proportion is increasing and it is estimated that about 70% of provincial needs can be produced from the mix and extent of timber resources available. The total forest industry contributes about \$173 million annually to the gross provincial product.

Forest research is principally carried out by the Canadian forestry service of the federal environment department. Post high school education in forestry is available at Memorial University and at the College of Trades and Technology (CTT). Memorial University offers a three-year diploma course in forestry and is affiliated with the forestry faculty of the University of New Brunswick. At the CTT students may obtain a diploma after successfully completing a two-year forest technology course.

Prince Edward Island. About 45% of the 5 656 km² of land area is tree-covered. The wooded areas consist of scattered patches with a greater concentration in the eastern and western sections. All woodland is privately owned except some 129 km² of provincially owned forest land.

The forestry branch of the agriculture and forestry department administers all forestry matters in the province — reforestation, protection, extension and woodlot improvement. The forestry branch is concentrating its resources in re-establishing commercial quality forests comprised of key valuable species such as black spruce and red pine. Facilities have been constructed and developed, including greenhouses and farms with capacities for production up to 10 million trees per year.

Nova Scotia. Of Nova Scotia's land area of 52 841 km², 44 442 km² are classed as forest and 75% of the forest land is considered suitable for regular harvesting. Although 91% of the forest land in Canada is held by the Crown in the right of the federal and provincial governments, only 24% is so held in Nova Scotia. Of the private woodlands, 71% are in parcels of up to 405 ha.

Provincial Crown lands are administered by the lands and forests department through a staff of foresters and rangers. Extension personnel assist owners of small private woodlands. The department administers the Lands and Forests Act as it pertains to all lands and is responsible for forest fire suppression. Forest fire detection is

facilitated through 35 observation towers and an aerial patrol service with two helicopters and six fixed-wing aircraft. In 1977, a total of 633 fires burned 1 170 ha of forest, an average number of fires, but half the usual area. Fire suppression crews and rangers with equipment are stationed throughout the province.

The forest industry is important to the economy contributing about \$150 million to the gross provincial product annually. In 1977, there were 355 firms sawing lumber or boxwood, a hardboard mill, two newsprint mills, a groundwood pulp mill and a chemical pulp mill. Roundwood production was 3.5 million m³, of which 2.9 million m³ was domestic pulpwood, 50 940 m³ was peeled pulpwood for export, and 11 213 m³ was poles, piling and pit props. Sawn products accounted for approximately 27% of primary wood production or 941 258 m³. Sawmill chip production totalled 291 490 m³.

A small reforestation program, active since the 1930s, has been greatly expanded in the 1970s. Experimental work on container planting, direct seeding, soil capability and site preparation continues, and efforts are being made to improve seed sources. A major nursery in Cape Breton Island was developed to provide stock for large-scale reforestation of budworm-ravaged areas with resistant species.

Timber, pulpwood and Christmas trees are sold through public tender, and cutting on Crown lands is done on recommendation of resource managers of the lands and forests department. Management cruises, regeneration studies and experimental cuttings are conducted on Crown lands and a program of operating these lands under long-term, integrated-use management plans is under way. During 1976-77, 1 336 ha of unleased Crown forest were thinned and improved, and silviculture treatments on 4 353 ha of leased Crown forest were supervised. One hundred and three kilometres of new Crown land access road were added to the existing roads.

The provincial forest inventory, a continuous system designed to operate on a 10-year cycle, commenced its second cycle in 1971. Aerial colour photography, begun on Cape Breton Island in 1969, has been extended to the rest of the province. Projects included a colour-infra-red aerial photo survey of spruce budworm damage in the Cape Breton Highlands. Remeasurement of a system of 1,765 randomly located sample plots every five years provides continuing data on growth, harvest rates and mortality.

Forest research is carried on by federal government agencies and the Nova Scotia Research Foundation. Investigations include stand improvement, tree nutrition, cutting methods, and insect and disease activities. Extension projects include fire prevention, a province-wide school motion picture program, distribution of information on forest and wildlife conservation, promotion of the Christmas tree industry, a hunter safety program, woodlot improvement, preparation of material for the mass media, and technical assistance to sawmill operators.

New Brunswick. Of New Brunswick's 72 092 km² approximately 87% is classed as forest land suitable for regular harvest. About 46% of the forest land is owned by the Crown and administered and managed by the natural resources department through its five forest regions and four support branches.

The forest industry is of prime importance to the economy of New Brunswick, directly contributing over \$220 million in value-added from primary forestry and forest-related industries and directly employing nearly 14,000 people. The total volume of standing timber is estimated at 580 million cubic metres; coniferous species make up 70% and deciduous species the remainder. Approximately 8.5 million cubic metres of timber are harvested annually with 70% of the harvest being cut as pulpwood.

A large-scale silvicultural program was initiated by the natural resources department and funded under a federal-provincial agreement. It was planned to plant 24 million seedlings on Crown lands in 1979, with an increase to 30 million by 1980.

A task force set up in 1978 recommended to the minister of natural resources a reallocation of Crown timber lands to the forest industry on an equitable basis, with the aim of achieving maximum economic and social benefits from the province's forest lands. Its recommendations were expected to be used in proposing legislation for the 1980 sitting of the legislative assembly.

Since 1952 New Brunswick carried out an aerial spraying program to protect balsam fir and spruce from the spruce budworm.

New Brunswick co-operates with the Canadian forestry service and the University of New Brunswick in research. The university offers undergraduate and graduate courses in forestry leading to BScF and MScF degrees. It also shares in administration of the Maritime Forest Ranger School along with New Brunswick and Nova Scotia governments and private industry.

Quebec. Forests with economic potential cover 684 000 km², about 45% of the total area of the province. This forest cover stretches northward to an irregular line near 52°N in the east and west and 53°N in the centre of the province. Private forests cover an area of 70 000 km². Public forests cover 614 600 km² of which 492 000 km² are productive and under management plans. Public forests carry a volume of almost 3 804 million cubic metres of standing timber of various species; private forests contain 470 million. Coniferous species make up 75% of the total volume. Private forests account for about 20% of the annual cut, about 5.7 million cubic metres. Forests account for about 25% of the gross provincial product.

The lands and forests department controls development and use of woodlands, undertakes conservation measures and ensures the economical development of the forestry sector. Principal management controls are: the annual inventory of some 78 000 km² of forest land; study and regulation of silvicultural practices and the zoning of the land for its best use; and restoration of lands destined for forestation by replanting or by proper treatment. Quebec maintains some 100 million plants in nursery stock. Regulations governing the use of forests cover operational control, issuing of permits to establish mills and cutting permits, measurement of wood harvested on Crown land, aid to development of private forests, and building and maintaining forest roads. Through regional conservation societies this branch is responsible for forest protection against insects, fire and fungus attack.

Ontario. Forested land in Ontario amounts to 79.5 million hectares, of which 42.1 million are classified as forest land bearing or capable of bearing commercial timber suitable for regular long-term harvest. About 90% of the productive forested land is owned by the Crown and administered and managed by the provincial ministry of natural resources through three main programs: lands and waters, outdoor recreation and resources.

The forest resources branch is responsible for the management including regeneration, tending and improvement of the forests under The Crown Timber Act, The Woodlands Improvement Act, The Forestry Act and the promotion of forestry on privately owned lands. The branch co-ordinates the operation of 10 nurseries with a current production target of about 73 million bare root seedlings and five facilities producing about 15 million container seedlings. Complementing this are up-to-date tree improvement and nursery soil management programs. The branch co-ordinates all silvicultural projects on Crown lands and privately owned land under agreement. Agreements have been signed with major licensees who assume responsibility for regeneration projects.

During 1977, 48 million nursery-produced trees were planted on about 21 222 ha of Crown and agreement lands, and tubed seedlings were planted on about 2 378 ha. Other silvicultural treatments included the direct seeding of 28 458 ha, treatment for natural regeneration on 24 375 ha and stand improvement (cleaning, spraying, thinning and pruning) on 49 071 ha. In all, 125 505 ha of Crown and agreement lands were silviculturally treated in 1977 to promote regeneration or to improve the forests. Owners of private lands may buy forestry planting stock from government nurseries at nominal prices and may receive free professional forestry advice. In 1977 (spring and fall), planting stock furnished for private lands totalled 7.5 million units. Under The Woodlands Improvement Act planting and improvement work may be carried out under government direction and mainly at public expense. Since 1966, the program has provided assistance for 111 150 ha of privately owned land.

Ontario legislation permits municipalities and conservation authorities to place submarginal land, to which they have acquired title, under agreement with the ministry, which plants and manages the properties for a specified period. Over 106 593 ha are managed intensively under such agreements. Older plantations are thinned regularly

and the trees removed are used for pulpwood, posts, poles and sawlogs. Properties near population centres acquire value as recreational areas. Forest pest problems in 1977 were dominated by the spruce budworm which infested almost 14.1 million hectares, 5% less than in 1976, but spraying operations to control this insect were limited to 4 200 ha in high-value areas. Smaller acreages on Crown lands and lands managed under agreement were treated for white pine weevil, pine and spruce sawflies, white grubs, white pine blister rust, annosus root rot and mice.

The forest research centre provides scientific and technical knowledge to improve management of forest resources. Various disciplines including tree ecology and physiology, site and fertilization, tree genetics and breeding, mensuration, silviculture, equipment design and development are used to solve problems in tree improvement, stock production, regeneration and forest tending. Results of province-wide research are published in journals and reports. Research headquarters is at Maple and there are four field stations at Thunder Bay, Sault Ste Marie, Dorset and Midhurst.

The timber sales branch co-ordinates management plans for Crown management units and approves plans for company management units. Forest resources inventory requirements and priorities for management plans are determined by the branch. As of March 31, 1977, 174 plans (88 Crown units, 26 company units and 60 agreement forests) were completed or under way for about 534 443 km². Planning access roads is another responsibility. The branch arranges for allocation, disposition and measurement

Forests cover more than one-third of Canada's land area and in 1978 forest products made up 19% of export sales. Newsprint alone accounted for \$2.88 billion in exports.

of Crown timber through Crown land licensing, timber sales and wood scaling. During 1977, some 428 Crown timber licences covering an area of 241 393 km² were effected. The Crown land timber harvest amounted to 15.9 million cubic metres. Ontario's primary wood-using industries are licensed and their performance is monitored. In 1977, there were 822 primary wood-using plants in Ontario. The branch is also responsible for promoting new industrial development and forest industry growth. Information is collected and analyzed on production, transportation and use of timber.

The aviation and fire management centre is responsible for forest protection of a 518 000 km² area, divided into seven regions and 38 districts. In 11 other administrative districts, south of this area in agricultural counties, municipalities are responsible for fire control. The vast inaccessible land north of the protection area, totalling over 295 000 km², does not support significant stands of merchantable timber and, except for property values and human life, are not normally protected. Within the fire regions, agreements were in effect in 1978-79 with 205 municipalities for prevention and control of forest fires. An agreement was in effect with the federal government for fire protection of 392 127 ha of Indian lands.

Forest fires are detected primarily by aerial patrols using contracted aircraft. Limited backup detection is occasionally provided through lookout towers in areas of high wilderness recreational use such as Algonquin Park. Public reporting of forest fires is part of the program. The basic fire-fighting strike force comprises 135 trained five-man unit crews and 39 fire-bombing aircraft. The natural resources ministry owns 49 aircraft, most of which can drop either long- or short-term retardant on fires. Contracted helicopters and heavy water bombers are also used. The communication system includes a network of ground stations, radiotelephones, fireline radios, aircraft radios, portable aircraft radiotelephones, telex and facsimile. A network of 125 primary weather stations supplies information to determine fire weather indexes and aids detection patrol planning.

Manitoba. The administration of provincial Crown forest lands in Manitoba is the responsibility of the forest division of the mines, natural resources and environment

department, through four major sections: forest inventory, forest protection, forest management and region forestry administration.

A provincial forest nursery supplies stock for reforestation. A tree improvement program has been initiated to ensure seedlings of the highest possible quality. Seedlings are supplied to farmers for worklots, to commercial Christmas tree producers, and about 3 million are planted annually in reforestation of Crown lands. Conventional planting programs are being reduced in some areas and reforestation of cutover lands is being achieved through scarification and seeding. Forest improvement by thinning, cleaning and chemical spraying removes undesirable species and encourages growth of preferred trees. Forest inventories cover about 26 806 km² annually. Based on these inventories, working plans with annual allowable cuts are made.

Forest management licences may be granted for up to 20 years and are renewable. Timber sales may be from one year upward and timber permits for periods of up to one year. Three pulp and paper mills and one large sawmill provide the backbone for Manitoba's primary forest industry. Their production is augmented by a dozen intermediate-sized sawmill operations and numerous small sawmills and timber harvesting operations.

There are 332 477 km² under forest protection with zones of priority in less accessible areas. Fires are detected through a network of lookout towers and an aircraft detection system and ground patrols. Approximately 233 000 km² are covered by aerial patrols.

Public education in fire prevention and forest conservation is carried out through radio, television, newspapers, pamphlets, signs, films and tours.

Saskatchewan. The forests of Saskatchewan cover 352 000 km² of which 115 000 km² are productive and suitable for harvest.

The forestry branch of the tourism and renewable resources department consists of these sections — management, inventory and silviculture — and develops and evaluates forest policies which are carried out by regional authorities. The province has seven resource administration regions divided into resource officer districts. The Northern Saskatchewan department administers the northern forested area and is responsible for forest protection through a network of 75 lookout towers, and patrol aircraft during high hazard periods. A VHF communication system is operated in towers, vehicles, aircraft and bush camps. Helicopters and fixed-wing aircraft capable of water-dropping provide aerial support. Six land-based Tracker aircraft are equipped to drop long-term fire retardants.

Alberta. The 390 176 km² of forest lands in Alberta include 201 491 km² capable of producing forest crops. They are administered by the Alberta forest service of the energy and natural resources department. Jurisdiction is decentralized into 10 forests, each under the control of a superintendent supported by specialists in timber management, fire, land use, construction and communications. The forests are subdivided into ranger districts each under a district forest officer.

A timber management branch is responsible for the inventory and sale of Alberta's timber resources under a sustained yield management program. The branch prepares plans on all management units to which the quota system of tenure apply, and reviews and approves management plans prepared by forest management agreement holders.

The branch reviews, approves and inspects annual timber harvesting plans and operations, collects Crown charges relating to timber, maintains a reforestation record system on cutover areas and enforces reforestation legislation.

A forest protection branch employs specialists such as a meteorologist and a telecommunications officer; an aircraft dispatch section assists in prevention, detection and suppression of fires. A forest land-use branch manages multiple land use in the forested area, including grazing, recreation and watersheds. It protects forest lands from excessive damage by industrial activities such as oil, gas and mineral development. Attention is given to the eastern slopes of the Rocky Mountains containing the headwaters of the North and South Saskatchewan rivers.

A reforestation and reclamation branch conducts projects on provincial forest lands and operates the Pine Ridge Forest Nursery which can produce 20 million tree seedlings

a year for restocking cutover and burned over lands. It also is responsible for a tree improvement program.

Basic research in the forestry program is contracted out to universities and other agents funded through the Alberta Forestry Research Trust Fund Act and also by the federal forestry service through its research laboratory in Edmonton.

British Columbia. Over 52 million hectares, or 60% of British Columbia's area, is classified as forest land. This includes over 8 million cubic metres of mature merchantable timber, most of it coniferous. Of this, 94% is publicly owned and managed by the provincial ministry of forests.

Forest and range legislation in 1978, The Ministry of Forests Act, The Forest Act and The Range Act, identifies the functions of the ministry and new directions for managing forest and range resources.

For management purposes the province is divided into six forest regions administered from offices in Vancouver, Prince Rupert, Prince George, Williams Lake, Kamloops and Nelson. In each forest region district managers are responsible for administering the forest and range acts, putting ministry policies into practice, and administering the programs in the field. Directional headquarters remains in Victoria.

The management of forest resources for a balance of growth and harvest continued; the annual allowable cut (1978) was 86.5 million cubic metres. This cut would permit a harvest sustainable in perpetuity.

Sustained yield administration stabilizes the industry and with improved small wood use technology, uses a greater proportion of the annual harvest from the interior. In 1978 coast forests accounted for about 41% of the total cut and the interior 59%. Public sustained yield units are areas in which the forests ministry manages the Crown forest and range lands. In these units, established logging operators can apply for licences to log at a given rate per year.

Almost all interior forest is publicly owned. Most privately owned, leased or licensed forests are on the coast. There are several systems of timber disposal. The tree farm licence is a contract between the government and a company or individual to manage an area, including any privately held forest land, on a sustained yield basis. Tree farm licences are re-examined for renewal every 21 years. Under The Forest Act (1978), tree farm licences have a 25-year term but may be replaced in the 10th year with a new 25-year licence.

Forest fire prevention and suppression are vital to sustained yield management. Contracted air tankers, fire spotter aircraft and helicopters are employed during the fire season for early discovery of forest fires.

Liaison with the federal forestry service provides information on insect and fungal problems, fire research, silviculture, nursery, soils and wood products.

For administration of Crown forest lands, the forests ministry, along with other ministries, has developed an integrated use concept. Some forest lands may be withdrawn from timber production for other uses. These losses may be offset by increased production through intensive forest management.

Statistics of the forest industries

10.1.4

Canada's forests provide raw materials for several large primary industries. Much of the output of the forest industries is exported; the sawmill industry and the pulp and paper industry contribute substantially to export trade providing a large part of the foreign exchange necessary to pay for imports. Other statistics of manufacturing activity, the wood industries and the paper and allied industries are given in Chapter 18.

Logging industry

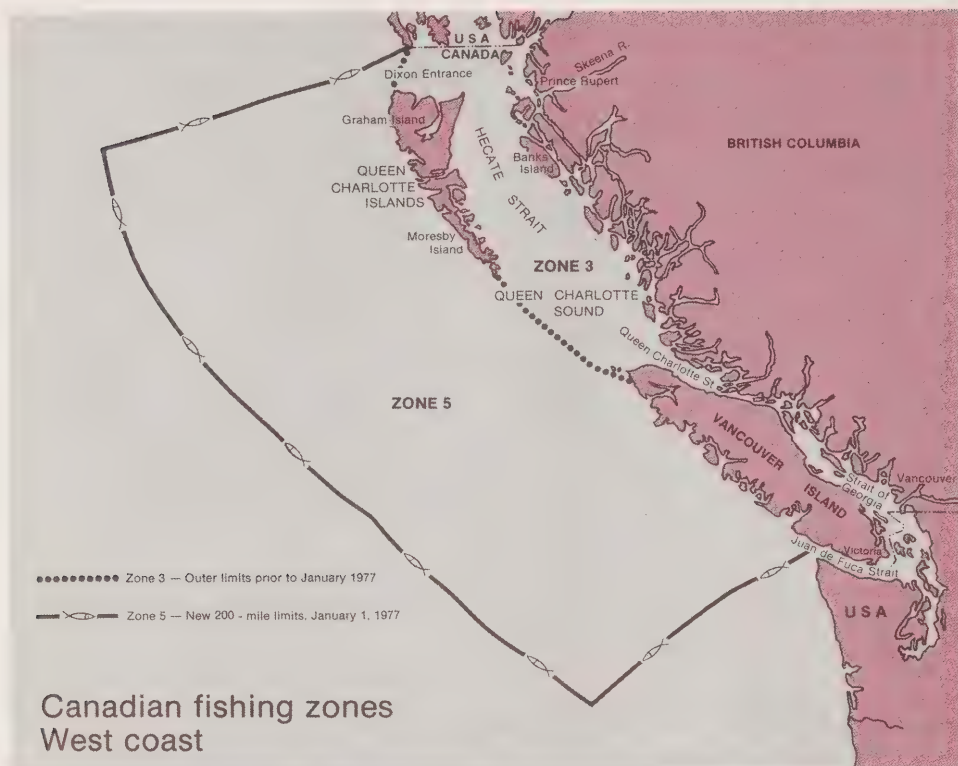
10.1.4.1

Tables 10.4 and 10.5 give the estimated quantities of wood cut in Canada, by province and by type of product, for 1974-77. The total volume increased from 140 million cubic metres in 1976 to 149 million in 1977.

Wood industries

10.1.4.2

The standard industrial classification subdivides the wood industries group into sawmills and planing mills, shingle mills, veneer and plywood mills, sash, door and other



millwork plants, manufacturers of prefabricated buildings, manufacturers of kitchen cabinets, wooden box factories, the coffin and casket industry, the wood preservation industry, the wood handles and turning industry, particleboard, and miscellaneous wood industries.

Sawmills and planing mills, shingle mills, veneer and plywood mills and particleboard plants (included in the miscellaneous wood industries group) use mainly roundwood as a raw material and are called primary wood industries. Secondary wood industries manufacture part of the production of primary wood industries into a variety of products. However, most primary wood industries production is not further processed.

Sawmill and planing mill industry. Lumber is the most important single commodity and British Columbia is the most important province in this field. The total value of shipments of establishments classified to this industry in 1977 amounted to nearly \$3.7 billion. Lumber accounted for nearly \$3 billion. A small amount of lumber is produced by establishments classified to other industries.

Shingle mill industry. Most shingles and shakes in Canada are produced by British Columbia mills. Considerable quantities are produced by establishments classified to other industries and by individuals intermittently operating one or two shingle machines or producing shingles by hand; although production is not adequately recorded it contributes significantly to the total.

Veneer and plywood industry. Production of hardwood veneer and plywood is confined to the eastern provinces and production of softwood veneer and plywood almost entirely to British Columbia; Douglas fir is most commonly used because of its

large-diameter logs from which large sheets of clear veneer can be obtained. Of the hardwoods, birch is the most important species. Although most raw materials are of Canadian origin, some decorative woods are imported, particularly walnut.

Production of softwood veneers is further manufactured into softwood plywood by Canadian mills. Some hardwood veneers are shipped to other veneer and plywood mills in Canada for further manufacture or to industries such as the furniture industry for veneering. A significant portion is exported.

Paper and allied industries

10.1.4.3

The standard industrial classification subdivides the paper and allied industries group into the pulp and paper industry, asphalt roofing manufacturers, paper box and bag manufacturers, and other paper converters.

The pulp and paper industry is the most important. Part of its production is consumed in Canada or serves as raw material for paper-using or secondary paper and allied industries. A great part of it is exported, particularly newsprint and various types of pulp, most of it to the United States. Some plants included in the pulp and paper industry classification convert basic paper and paperboard into more highly manufactured papers, paper goods and boards. Their output is only a small part of Canada's total production of converted papers and boards. Table 10.9 gives shipment and production figures for pulp for 1975-78. Table 10.10 gives shipments of basic paper and paperboard for 1975-77. Table 10.11 shows exports of pulp and newsprint for 1975-78.

Asphalt roofing manufacturers produce composition roofing and sheathing, consisting of paper felt saturated with asphalt or tar and, in some cases, coated with a mineral surfacing. Total shipments in 1977 were valued at \$153.5 million.

Paper box and bag industries include manufacturers of folding cartons and set-up boxes, of corrugated boxes and of paper and plastic bags. Total shipments in 1977 amounted, respectively, to \$378.2 million, \$598.8 million and \$377.8 million.

Other paper converters produce such paper products as envelopes, waxed paper, clay-coated and enamelled paper and board, aluminum foil laminated with paper or board, paper cups and food trays, facial tissues, sanitary napkins, paper towelling and napkins and toilet tissue. Total value of manufacturing shipments of this industry in 1977 amounted to \$778.0 million.

Fisheries

10.2

Canada has co-operated with other nations to conserve high-seas fisheries resources through joint research projects and international agreements and took further action to protect and manage the fisheries in its coastal areas by extending its coastal fisheries jurisdiction to 200 nautical miles on January 1, 1977. Bilateral agreements were concluded with foreign countries to allow them to continue to fish within Canada's extended jurisdiction for stocks surplus to Canada's harvesting capacity and to provide a smooth transition to the new regime of fisheries management off the Canadian coasts. Multilateral agreements which applied preceding extension of jurisdiction were renegotiated to take into account the 200-mile zones off both coasts. A new international organization was established to ensure recognition of Canada's special interest in the area beyond and immediately adjacent to the 200-mile limit on the Atlantic Coast. Agreements were also negotiated with the United States to provide for reciprocal fishing and third party settlement of the boundary between Canadian and US fishing zones off the Atlantic Coast.

The federal government has full legislative jurisdiction over the coastal and inland fisheries of Canada. All laws for the protection, conservation and development of these fisheries resources are enacted by Parliament. Management of fisheries is conducted co-operatively with the provincial governments; some of them have been delegated certain administrative responsibilities.

The federal fisheries and oceans department controls marine and freshwater fisheries in Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick, Yukon

and Northwest Territories. In Ontario, Manitoba, Saskatchewan and Alberta fisheries are managed by the provincial governments. In Quebec, the provincial government manages marine and freshwater fisheries. The federal government inspects fish and fishery products produced for sale outside the province. In British Columbia, the fisheries for marine and anadromous (fish that migrate to the sea from fresh water) species are managed by the federal department, but the provincial government manages freshwater fisheries. In the national parks, fisheries are managed by the Canadian Wildlife Service. Licences for sport fishing are usually distributed by the provincial or territorial governments which retain revenues collected.

Close contact with fishermen, the fishing industry and provincial authorities is maintained through the department's regional offices. Co-ordination and discussion between federal and provincial fisheries managers are facilitated through federal-provincial committees.

10.2.1 Federal government activities

The work of the federal government to conserve, develop and generally regulate the nation's coastal and freshwater fisheries is carried out by the fisheries and oceans department which has a broad range of responsibilities: management of Canada's ocean and some inland fisheries; fisheries and oceanographic research contributing to optimum use of renewable aquatic resources and marine and fresh waters; hydrographic surveying and charting of navigable coastal and inland waters; administration of small craft harbours; environmental impact studies affecting coastal and inland waters; and research in support of international agreements relating to fisheries management and marine environmental quality.

Functions of the fisheries and oceans department are grouped under: fisheries management, ocean and aquatic sciences and fisheries economic development and marketing. The department has regional and field locations. Regional headquarters for fisheries management are in Vancouver, Winnipeg, Quebec, Halifax, and St. John's, and for ocean and aquatic sciences at Patricia Bay, BC; Burlington, Ont.; and Dartmouth, NS. There are research institutes and laboratories at centres across Canada.

Appointed public corporations and boards are closely aligned with the fisheries and oceans department. Included are the Fisheries Prices Support Board, the Canadian Saltfish Corporation and the Freshwater Fish Marketing Corporation.

International fisheries. Many injurious effects on aquatic resources are results of historical practice, insufficient knowledge, multiple uses of water, social and economic conditions, and national and international competition. Problems under national control are corrected as conditions warrant but many resources shared with other nations must be managed jointly.

Canada co-operates with many nations in obtaining scientific data and formulating policies for developing and conserving fisheries through membership in 10 international fisheries commissions and an international council. These international organizations are set up under formal conventions. Canadian representatives appointed by order-in-council include officials of the fisheries and oceans department and members of the fishing industry.

Canada is a member of the fisheries committee of the Food and Agriculture Organization of the United Nations and of the Codex Alimentarius Commission, concerned with world food quality standards.

10.2.2 Provincial government activities

Newfoundland. The fisheries department promotes development of the province's fishing industry. Experiments and demonstrations are conducted on new fishing gear and modification of existing types, building multi-purpose fishing craft and exploring potential fishing grounds to increase efficiency and landings. Subsidies are paid to fishermen for fishing vessels and certain types of inshore fishing gear.

Loans are made to processors to set up and expand fish processing plants and for deep sea druggers. Aid is provided to fishermen to build modern vessels capable of varied fishing operations and larger production by loans from the Newfoundland

Fisheries Loan Board. The Fishing and Coasting Vessels Rebuilding and Repairs (Bounties) Act authorizes grants to maintain and prolong the life of the existing fleet. The Coasting Vessels (Bounties) Act and the Fishing Ships (Bounties) Act authorize a bounty for locally built ships over 12 years of age, of 35% of the approved cost of work, provided the vessel is over 10 gross registered tons. A small boat bounty program provides 35% of the approved cost of fishing boats measuring 6.08 to 10.7 m long or over, if they do not exceed 10 tons gross. Loans are available to fishermen to build new boats, buy used boats, acquire new engines, buy certain approved types of mechanical and electronic fishing equipment and convert boats from one type of fishing operation to another.

In direct employment generated, fisheries continue to outrank all other resource sectors. In 1978 there were 18,000 fishermen and 8,000 plant workers in the industry. Total landings of all fish species amounted to 456 000 t (tonnes) with a landed value of \$112 million and a market value of about \$336 million.

Inland waters of Newfoundland, although they provide excellent sport fishing, are not commercially exploited. Lakes and ponds remain under the authority of the tourism department but, under federal-provincial agreement, these waters, rivers and streams, are under federal control for conservation and guardianship.

The Prince Edward Island fishing industry ranks third in the island economy. Landed value of the 1978 catch exceeded \$23.6 million. The industry involves 2,500 fishermen and helpers and between 700 and 800 people in the fish processing industry at 24 processing plants.

The PEI fisheries department, with six divisions, supplements activities of the federal fisheries and oceans department and is responsible for administering programs to upgrade the industry and increase its returns.

A program in the aquaculture division is aimed at diversifying opportunities in fisheries through increased production, improved quality and a broader resource base. Emphasis in 1978-79 was placed on oyster industry improvement, establishing a mussel rearing industry and developmental work of other shellfish farming, seaplant seeding and salmonid culture. The resource harvesting division conducts exploratory fishing projects and resource assessment studies on new and existing species, and conducts gear technology studies related to harvesting methods and equipment. In 1978-79, projects included groundfish catch expansion, and development of scallop and clam resources, seaplant resources, pelagic species, lobster resources, and underexploited species.

Port development programs of the product handling division are designed to improve fish handling, processing and holding techniques and to ensure better fish quality. Water systems, offloading ramps, fishermen's bait sheds, weather shelters and unloading systems and wet fish storage facilities were planned for additional ports. Processing and quality control under the PEI Fish Inspection Act and Regulations, enforces quality standards, assists the processing industry to improve methods and productivity and promotes new product development.

The economics and statistics division provides technical help to the fishing industry in financial management, feasibility analysis and statistical studies. The extension division provides information, and conducts field demonstrations, fishermen's training and technical upgrading programs.

Loans are made to fishermen and the fishing industry through a Crown corporation empowered to grant credit in fisheries, industry, tourism and agriculture.

In Nova Scotia the fishing industry is of major economic importance. Landed value of fish in 1978 was about \$195 million. Market value was about \$350 million. Fish products account for more than 30% of Nova Scotia's exports. Over 10,500 fishermen and 4,500 plant workers are directly employed and 186 fish processing plants are operating.

The fisheries department is engaged in almost all aspects of the fishing industry and contributes to policies and programs of the federal government. Industrial development division programs are related to fishing vessels, gear and equipment, harbours and wharves, port facilities and processing plants. They deal with catching, handling, processing and marketing fish and fish products, provide technical help and direction to

fishermen and processors, and incentive grants to encourage greater productivity. Loans are available to fishermen and processors through the Nova Scotia Resources Development Board.

The resource utilization division is involved in projects to make the greatest use of fishery resources, processing these to the highest level, and marketing products at good prices. Its efforts in aquaculture aim to produce fishery resources in a controlled environment. Activity is directed to develop under-utilized and unexploited species, recover and use fish usually discarded, and encourage production of more food fish and less fish meal.

Training programs for commercial fishermen are operated at the fisheries training centre in Pictou and courses are held in fishing communities. The division field service has nine fisheries representatives to deal with fishermen and all segments of the fishing industry.

In New Brunswick commercial fishing is one of the most important industries, employing about 6,000 fishermen with annual earnings of \$35 million and 7,000 plant workers. The annual marketed value of all fish and shellfish products was about \$150 million in 1977, with 68% of exported production going to the US. New Brunswick's commercial fisheries, both tidal and inland, are under federal jurisdiction. Angling in Crown waters is the responsibility of the provincial natural resources department. The New Brunswick government plays a major role in resource assessment and development, fisheries training, financial aid to the industry and long-term planning. Close liaison is maintained with other federal and provincial departments and agencies concerned with fishing.

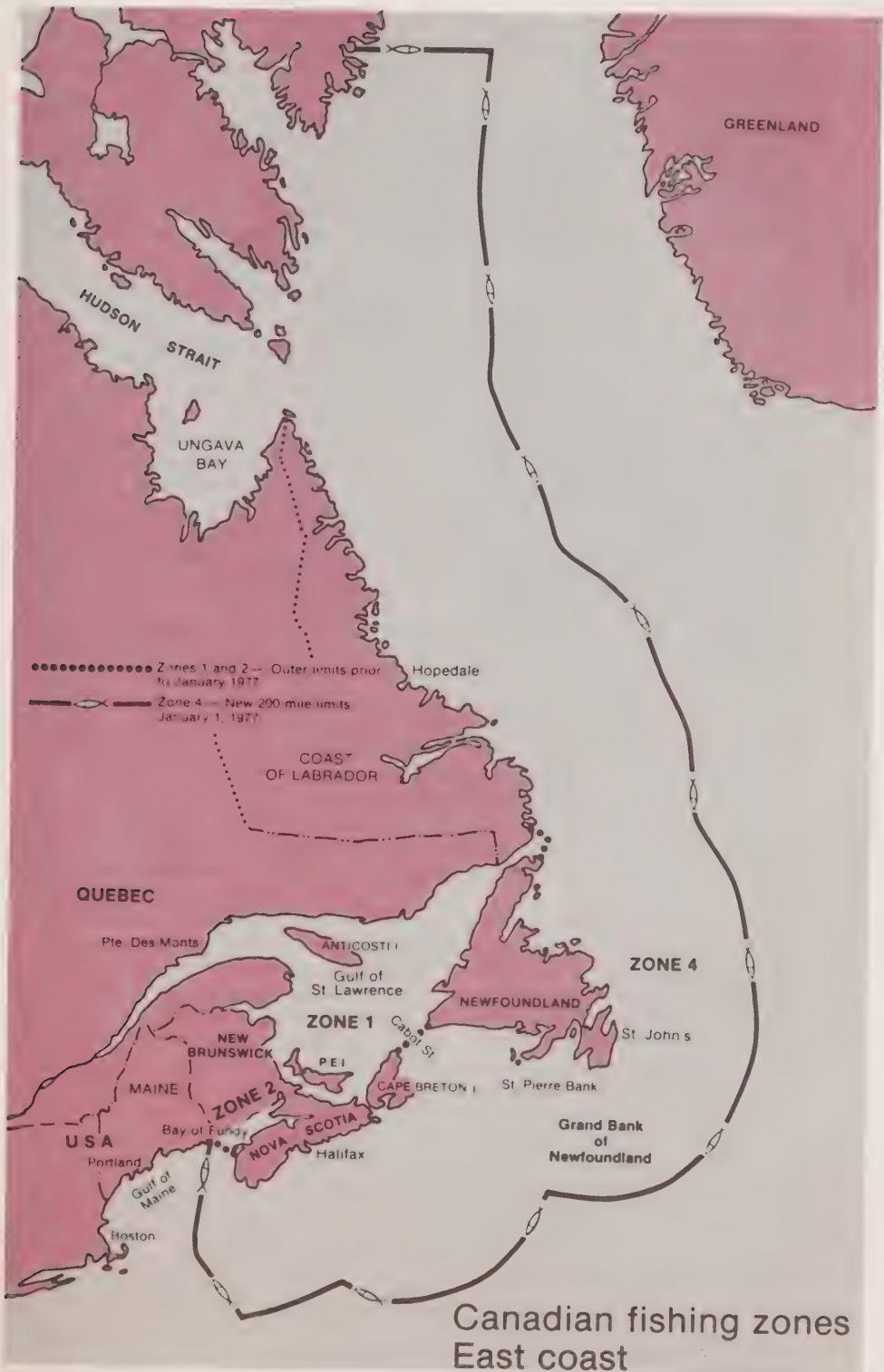
An inspection and marketing branch administers the New Brunswick Fish Inspection Act and Regulations. To avoid duplication of personnel, arrangements have been made with the federal fisheries and oceans department to carry out inspection duties at the plant level. The branch promotes expansion and modernization of fish processing plants and establishment of new plants. It carries out a program of product development to increase the added value of the catch. Another program promotes fish consumption in the province. A marketing branch studies existing and potential markets with other government agencies. It provides market information to producers, buyers, brokers and wholesalers.

A research and development branch develops aquatic resources and new fishing technology. Areas of activity include: resource assessment; resource utilization; aquaculture development; protection of the aquatic environment; development of the fishing fleet; research in vessel design and construction; development of new fishing methods; and modernization of fish handling processes on board fishing vessels. The branch also co-operates with the federal fisheries and oceans department.

A fisheries training branch provides technical training to fishermen and plant personnel and training for managers and supervisors. In its school of fisheries at Caraquet in northeastern New Brunswick in the 1977-78 academic year, 167 fishermen received training. The marine emergency duty centre includes a two-storey mock-up of a fishing vessel used for fire fighting and a separate building with classroom facilities to improve training.

The Fishermen's Loan Board of New Brunswick, formed in 1946, has granted 3,969 loans to New Brunswick fishermen for a total of \$67.7 million. A financial and technical assistance branch operates under the Fisheries Development Act and Regulations which came into force March 1, 1978, replacing the Fishermen's Loan Act.

The branch investigates and studies applications for financial assistance and makes recommendations to the fisheries development board of New Brunswick. The board makes recommendations on applications for financial assistance to the minister who may provide direct loans up to \$25,000. For larger amounts and for forgivable loans, guaranteed loans and grants, authorization must be obtained from the lieutenant-governor in council. This money helps modernize and develop the fishing fleet and the fishing industry of New Brunswick, build fishing vessels and aquaculture facilities, finance major repairs and buy engines and equipment for fishermen. The branch inspects and evaluates used fishing vessels and monitors construction of new ones.



Loans are repayable within two to 25 years, depending on their type. For large steel trawlers the maximum repayment period is 25 years; for wooden ones, 20 years. Most new vessels built for fishermen and fish processing firms are financed by the provincial fisheries department.

Sport fishing contributes substantially to the economy of the province. Great Atlantic salmon rivers like the Miramichi, the Restigouche and the Saint John are known around the world for their prolific production of this majestic game fish and attract many thousands of tourists each year. Anglers catch as many as 50,000 salmon a year in the Miramichi system alone. Many other species are sought by both residents and non-residents in hundreds of streams, rivers and lakes. Tuna sport fishing has become an interesting venture for tourists in northeastern New Brunswick.

Quebec. In 1976 Quebec fishermen landed 28 million kilograms of fish and shellfish in the vast reservoir formed by the St. Lawrence River, gulf and estuary. The landed value to the fishermen was \$28.8 million and the market value of the produce was \$39.9 million.

The fishing industry is of prime importance on a regional basis. It is the backbone of the economy of the Magdalen Islands and the lower North Shore and is a major activity in the Gaspé peninsula. Overall there are 6,460 commercial fishermen, including full-time coastal fishermen, sea-going helpers and officers and crew operating the seiners, long-liners and draggers. Some 30 processing plants employ about 1,300 workers. In this sector, commercial fishing has a multiplier effect on employment and incomes. Fishermen and shipowners build and repair their fishing vessels within the region, thus giving employment to shipyards. Local labour is also used for building and maintaining the various marine installations necessary for docking, safety and discharge of cargo, for operating ice-making plants, and in freezer and storage operations.

In 1976 cod (37.8%), redfish (18.2%) and herring (11.9%) made up 67.9% of the total catch. In terms of value, the proportions were: cod 30.8%, lobster 20.1%, shrimp 11.4% and redfish 6.0%.

The Quebec sea-going fishing fleet includes wooden or steel-hulled vessels of between 15 and 450 net registered tons; 3,728 craft of all types are engaged in the coastal fishery. The government has tried to modernize the ocean-going fleet through grants and construction loans for building a 40 m steel seiner and prototype 20 m container-seiner also steel-hulled, as well as seven wooden long-liners and draggers.

The commercial fisheries branch allocated grants for boat-building, the purchase of fishing gear, collection of catch from coastal fishermen, land-based teams, marketing assistance and marine insurance. Interest-free loans were approved for construction and repair of fishing vessels.

A main objective of the marine fisheries branch under the Canada-Quebec Agreement of 1968 (renegotiated in 1971) was a more efficient use of funds from the private as well as government sectors and concentration of fisheries in centres with well-equipped port facilities. Under the terms of the initial agreement, \$4.8 million was budgeted for facilities related to ocean-going fisheries, and this amount was increased to \$10 million in the agreement as renewed. The program was to be completed by 1975 but due to increased costs it became necessary to make a supplementary agreement concerning the industrial base structure in the amount of \$14 million to be spread over the 1974-78 period to continue work already begun.

When this work in the Gaspé region is completed, five production centres will have been set aside, three to be developed as industrial fisheries complexes at Rivière-au-Renard, Paspébiac and Grande-Rivière, the latter a limited production centre with secondary centres at Newport and Sandy Beach. In the Magdalen Islands, two centres have been set aside — an industrial complex at Cap-aux-Meules and a secondary centre at Havre-Aubert. Landing points will provide unloading and storage facilities. They will not have processing plants on site but will be linked by a fish transportation system to the nearest production centres. The marine fisheries branch hopes to have landing points completed at Gascons and Les Méchins in the Gaspé region and Millerand and Étang-du-Nord in the Magdalen Islands before the present agreement expires. Other auxiliary landing points will be maintained to serve the needs of many coastal fishermen.

Fishing in Quebec's inland waters falls under the jurisdiction of the tourism, fisheries and game department. To maintain the high standard of the sport in the province, the department carries out various wildlife research, development and protection projects. To protect aquatic life, the department also rears many species of fish for restocking Quebec's lakes and rivers under public management.

Excellent fishing may be found in all provincial parks and reserves. Gaspé and Laurentide parks are renowned for brook trout fishing and the waters of Chibougamau and La Vérendrye reserves abound in pickerel, pike and lake trout. Quebec has 102 salmon streams in Gaspé and on the North Shore, most of them open to anglers.

A wildlife council submits recommendations to the minister concerning legislation to maintain satisfactory fishing conditions or to deal with problems arising from modern life and its effects on wildlife.

Ontario. Ontario's fishery resources are administered by the fisheries branch of the natural resources ministry under the authority of the federal Fisheries Act, the Ontario Fishery Regulations and the Ontario Game and Fish Act.

The commercial freshwater fishing industry in Ontario has a capital value of over \$24 million and produced a yield of 23 million kilograms of fish in 1977 for which fishermen received \$15 million in sales. Nearly 2.5 million kilograms of bait fish were caught. Subsequent handling and processing of fish result in a contribution of about \$3 million to the provincial economy. The widely scattered industry, centred chiefly on the Great Lakes, provides employment for about 2,213 commercial food-fish fishermen and 2,300 bait-fish fishermen; many more are employed indirectly. Approximately 900 are engaged in fish handling and processing. Species harvested commercially include yellow perch, smelt, whitefish, pickerel, pike, lake trout, herring, chub, carp, white perch, sturgeon, white bass, bullhead, catfish, eel, goldeye, sunfish, burbot, freshwater drum, rock bass, crappie, sauger and suckers. Slightly under 90% of all fish landed in Ontario are harvested from the Great Lakes. More than 350 smaller inland lakes, mainly in northwestern Ontario, are commercially fished.

Modernized fishing methods and equipment include diesel-driven steel-hull tugs with depth sounding devices, radar and ship-to-ship and ship-to-shore communications. Modern icing facilities and transportation methods are in use as well as new types of fishing gear. Programs to develop more efficient and economical fishing and processing techniques resulted in efficient bulk-handling of smelt and a fish-meal plant which produces a marketable product from fish-processing wastes and fish unsuitable for food. Trawling on Lake Erie is efficient in harvesting smelt year round. Most Ontario fishermen are organized into local associations mainly represented by a provincial council of commercial fisheries.

Ontario has an estimated freshwater area of approximately 177 388 km². Excellent angling opportunities are available for such prized fish as brook, rainbow and lake trout, yellow pickerel (walleye), smallmouth and largemouth bass, northern pike, and maskinonge. Quantities of hatchery-reared coho and chinook salmon are released annually in the western basin of Lake Ontario and provide good fishing during late summer and fall. A wide selection of ice-angling equipment including snowmobile rentals is available and seasons have been extended in many parts of the province for certain species of fish.

Revenue from the sale of angling licences in 1977 was \$5.7 million. Prices and numbers sold vary greatly according to licence type. Canadian residents bought 24,961 licences at \$4.00; non-residents bought 465,522 seasonal licences at \$10.75 and 164,744 at \$6.00. Total expenditures in Ontario related to resident and non-resident angling were estimated to be over \$500 million in 1977. The management of this resource is administered by a field staff of conservation officers, biologists and technicians.

Ontario operates 14 fish hatcheries and rearing stations for the economic production of high-quality species to sustain recreational and commercial fishing. Studies are conducted on the improvement of transportation and planting techniques, including the use of aircraft and trucks, to improve survival and returns to the angler. Marking hatchery fish by removing a single fin is providing information on survival of fish stocks; 200 fish sanctuaries provide protection during spawning. Research programs

are directed toward specific fisheries management problems in the Great Lakes and in smaller inland waters.

Manitoba. Manitoba's interior location belies the importance of its fisheries resources which stem from an abundance of fresh water in about 104 000 km² of lakes and streams covering 16% of the province.

In the year ended March 31, 1978, the commercial fishery produced 13.2 million kilograms of fish, (round equivalent weight). The value to the fishermen increased from \$7.6 million in 1976-77 to \$8.8 million in 1977-78. Summer catch represented 68% of the value of the yearly catch. Lake Winnipeg contributed 4.8 million kilograms (36%), followed by the northern waters with 3.4 million (26%), Lake Winnipegosis with 2.0 million (15%), Lake Manitoba with 1.7 million (13%), and other southern lakes with 1.3 million (10%). In 1977 whitefish contributed 3.3 million, pike 2.5 million, walleye (pickerel) 3.2 million and sauger 1.5 million. A miscellany of species contributed 2.7 million. All of the commercial catch is marketed by the Freshwater Fish Marketing Corporation, a federal Crown agency, and is exported mainly to the United States. Gill-nets are the main fishing gear. About 1,857 fishermen were licensed during open-water fishing and 1,923 in winter fishing. During 1977-78, there were 3,170 individuals licensed.

Administration of sport and commercial fisheries is controlled by the minister of mines, natural resources and environment. The following are identifiable components of fisheries administration: program management, planning and economics, research, monitoring, extension, stocking, development, acts and regulations.

Sport fishery is an important use of the fishery resource, with walleye, pike, perch and several kinds of trout the principal sport species. In 1977-78, 185,827 angling licences were sold, 148,289 of them purchased by Canadian residents.

Saskatchewan. The southern commercial fishery and provincial sport fishery are administered by the fisheries and wildlife branch of the tourism and renewable resources department, with head office in Prince Albert. The resource development branch of the Northern Saskatchewan department, with headquarters in La Ronge, administers the northern commercial fishery.

During 1977, 2,243 commercial fishing licences were issued to fish 215 lakes. The harvest of 4.7 million kilograms was worth \$3 million to the fishermen. The industry, although widely scattered, is centred chiefly in the northern half of the province; about 75% of the production came from northern waters. In order of market value, the species composition of the catch was walleye, whitefish, lake trout, pike and tullibee.

One shallow saline lake in southern Saskatchewan produced 24 000 kg of brine shrimp and brine shrimp eggs. These are processed for sale to fish hobbyists. In 1977, 314 000 kg of buffalofish, a sucker species, and carp were harvested from the Qu'Appelle drainage, and 39 000 kg of bait fish were harvested by 37 commercial bait fishermen.

Interest in aquaculture decreased in 1977 with the licensing of 1,975 aquaculture enterprises to raise rainbow trout. The majority of operations were intended for the private use of the owner. About 625,000 rainbow fingerlings stocked in the spring of 1977 resulted in an estimated 75 000 kg harvest.

In 1977, there were 201,415 angling licences sold. Northern pike, walleye, perch, lake trout, rainbow trout, arctic grayling, brook trout and goldeye were the principal species taken. A continuous program of inventory of sport fishing stocks is maintained to provide up-to-date information for management purposes. During 1977, 353 waters were examined. Expansion of the exotic-species program continued and about 150 lakes and streams have populations of trout and salmon.

The provincial hatchery at Fort Qu'Appelle reared 8.4 million fish for distribution in 157 waters in 1977. Rainbow trout was the species most widely distributed. Others included walleye, brook trout, splake trout, arctic grayling, kokanee salmon, lake trout and perch.

The limnological and fisheries research program provides information on water bodies and fish species, and investigates factors affecting fish populations. This

information is used to develop fishery management policies and programs. Angler and commercial catch data are collected to improve fishery management.

Alberta. Commercial and sport fishing are administered by a fish and wildlife division of the recreation, parks and wildlife department, under the Fisheries Act (Canada) and the Fish Marketing Act (Alberta).

Production of commercial fish from Alberta's 16 796 km² of fresh water for the fiscal year ended March 31, 1978 was 2.1 million kilograms. The landed value of the catch was \$1.2 million and the market value was \$2.2 million. Lake whitefish, the most valuable commercial species, accounted for 51% of total landings. Tullibee was second, followed by pike, walleye, suckers, ling, perch and lake trout.

All fishing licence sales increased in 1977-78 to 269,041; 264,657 were sold to resident Canadians and 4,384 were non-resident licences. In addition 3,088 trophy lake licences, 614 spear fishing licences, 1,477 private, 38 commercial and 12 restricted game

On the Pacific Coast, landed value of salmon reached a record high of \$158 million in 1978, an increase of 45% over 1977. For the third year in a row, Canadian fishermen and processors set a new record in terms of earnings.

fish farm licences were purchased. In 1977-78, 209 lakes were stocked with almost 3.9 million fish: rainbow trout (86.8%) and other species including brook trout, perch, cutthroat trout, smallmouth bass, lake trout, golden trout and lake whitefish.

British Columbia. The marine resources branch of the provincial environment ministry is concerned with marine commercial fisheries and some aspects of mariculture. The federal government has jurisdiction over fisheries resources. Regulation of net fishing in non-tidal waters, including commercial fishing and authority for regulation of the game fisheries in non-tidal waters, is delegated to the fish and wildlife branch by the federal authority.

The provincial Fisheries Act provides for taxation of fisheries and for regulation and control of fish processing plants under a system of licensing. The act is also used to regulate commercial harvesting of oysters and marine plants.

The marine resources branch co-operates closely with the federal fisheries and oceans department. The branch and the federal agencies conduct research on shellfish, principally oysters and marine plants, which are under provincial control. Some research programs are implemented under agreement with federal and provincial authorities.

Statistics of the fishing industry

10.2.3

The waters off the Pacific and Atlantic coasts of Canada rank among the most productive fishing grounds in the world and provide a livelihood for some 54,800 sea fishermen. Inland waters support another 8,600 fishermen, while an additional 17,000 persons are employed in fish processing plants.

Tables 10.12 - 10.18 provide statistics on the fishing industry, including exports and imports, value of fishery products, landings of sea and inland fish, the chief commercial fish, market value of all fishery products and data on Pacific Coast production of canned salmon and Atlantic Coast production of frozen fillets and fish blocks.

The fur industry

10.3

The value of the 1977-78 Canadian production of raw furs amounted to \$73.2 million, made up of \$47.7 million (65%) from wildlife pelts and \$25.5 million (35%) from farm pelts. The \$47.7 million total was a record high, due to higher values for most types of pelts. Production in 1976-77 amounted to \$72.0 million.

Fur trapping. Prices for almost all kinds of Canadian wild furs have been on the increase and in 1976-77 and 1977-78 pelt values were substantially above historic levels. The

higher returns have encouraged trappers to work their traplines to full advantage, resulting in increased production of many species, especially fox and raccoon.

Table 10.19 shows the number of pelts taken of various species, and their average and total values. Table 10.20 gives a breakdown of value by province and territory.

The seal hunt. Harvesting harp seals is a traditional spring occupation of Canada's Atlantic coastal communities, particularly along the shores of Newfoundland and Labrador, the Magdalen Islands and the Quebec North Shore and on ice floes off northeastern Newfoundland (known as the front) and in the Gulf of St. Lawrence.

The hunt is conducted from large and small vessels and by landsmen operating on foot from coastal areas. The seals are harvested for their pelts as well as for meat and oil.

Canada and Norway participate in the Atlantic seal hunt. Annual quotas, based on scientific studies, are set by international agreement. The quota in 1979 was 170,000 seals, including 150,000 allocated to Canada. The hunt is conducted under supervision of officials of the fisheries and oceans department. Management policy is aimed at increasing the estimated 1.4 million seals to a target population of 1.6 million by 1990.

The economic value of the Atlantic seal hunt is estimated in excess of \$6.5 million. Earnings received by the sealers supplement annual incomes gained for the most part through employment in other fishing activities during the summer.

Fur farming. Mink are raised in all provinces except Newfoundland. In 1978 the principal producers were Ontario, British Columbia, Nova Scotia, Quebec and Manitoba (Table 10.20).

With minor fluctuations, mink pelt production in Canada declined since the peak year of 1967 when the output was 1,967,323 pelts. Lower returns in the face of higher production costs were responsible for this decline. Many mink farmers ceased operations and the number of mink farms decreased from 1,359 in 1967 to 402 in 1977, but increased to 452 in 1978. In earlier years a mink business was started by acquiring a small number of breeding animals and building up from that point. Entry into the business on a scale that would hold the promise of some return on investment within a reasonable time now involves a high outlay of capital; this is a limiting factor in attracting newcomers to the industry.

In 1978, there were 3,148 fox pelts produced on 193 farms across the country; the 1977 output was 2,981 pelts from 108 farms. The increase in production was attributed to the improved market for all long-haired furs; values for ranched fox pelts have risen sharply in the past decade. The 1978 average price of \$364.42 a pelt showed a large increase over the 1977 price of \$226.50. Encouraged by the general upturn, producers are expanding their operations and the demand for breeding animals is strong.

Fur marketing. The bulk of Canada's fur production is sold at public auction through five fur auction firms in Montreal, North Bay, Winnipeg, Regina and Vancouver. Furs are purchased through competitive bidding by buyers who may be purchasing for their own account or for firms in Canada or abroad. Canadian furs are usually sold in the raw or undressed state, facilitating entry into the many countries which maintain tariffs on imports of dressed furs.

In 1977-78 exports of raw furs amounted to \$82.3 million, 20% above 1976-77 exports valued at \$68.5 million. Imports for 1977-78 totalled \$74.7 million, 9% below the \$82.4 million of furs imported in the previous year. The increase in imports was due not only to a healthy fur retail business in Canada, but also to requirements occasioned through growing exports of fur garments. In 1977 exports of fur garments amounted to \$48.0 million, the highest value on record for this class of export.

The export of fur fashion garments on an important scale is a fairly new development on the Canadian fur scene. Historically, Canadian exports of furs have consisted mainly of undressed pelts from fur farms and the trapline. There are fairly definite limits to which this type of export can be developed. The production of wildlife pelts is relatively limited but showed an increase during 1977-78.

In the fur manufacturing industry no such limits apply. Other factors, however, are present, principally import tariffs and competition from fur manufacturers in the importing countries. A high degree of efficiency in design and manufacture is required

by Canada to compete, and there is a growing export group among Canadian fur manufacturers which is extending the horizons of this formerly largely domestic industry.

Wildlife

10.4

Wildlife is an important renewable natural resource. The original inhabitants of what is now Canada depended on it for food and clothing and still do in some remote areas. The coming of the Europeans brought development of the fur trade which guided the course of exploration and settlement. When the country was being developed, a number of mammals and birds became seriously depleted or extinct. As settlement progressed, wildlife habitat was reduced by cutting and burning of forests, pollution of streams, industrial and urban development, drainage of wetlands, building of dams, and other changes in the land.

Today, the arctic and alpine tundra, a major vegetational region, has begun to show serious man-made changes. The adjacent sub-arctic and sub-alpine non-commercial forests have been affected principally by increased human travel which has brought an increase in the number of forest fires, although the great forests farther south retain much of their original character despite exploitation. Arable lands, originally forest or grassland, have completely changed but they have, in some cases, become more suitable for some forms of wildlife than the original wilderness.

Canada is known for its varied and abundant wildlife. It maintains most of the world's stock of woodland caribou, mountain sheep, wolves, grizzly bears and wolverines. For a long time, certain species were protected from man and predator. Now, because of better understanding of how nature works, it has been recognized that many factors cause fluctuations in wildlife numbers, and hunting seasons and bag limits are based to a greater extent on population surveys and other scientific data.

In 1885, the Rocky Mountains Park (now Banff National Park) was established in Alberta, preserving an area of over 6 475 km² in its natural state; in 1887, the continent's first bird sanctuary was established at Last Mountain Lake in Saskatchewan; in 1893 when wood bison faced extinction, laws were passed to protect them and in 1907 a nucleus herd of plains bison was established at Wainwright, Alta. These were among the early attempts at wildlife conservation in Canada.

As a natural resource, wildlife within each province comes under the jurisdiction of the provincial government. The federal government is responsible for the protection and management of migratory birds and for wildlife on federal lands.

The Canadian Wildlife Service

10.4.1

The Canadian Wildlife Service (CWS) began as an agency to administer the Migratory Birds Convention Act passed in 1917. It was expanded in 1947 to meet the need for scientific research in wildlife management and is now a part of the environmental management service of the environment department.

The CWS conducts scientific research into wildlife problems in the Northwest Territories, Yukon and the national parks. Research projects in various areas of Western and Northern Canada continue on both polar and grizzly bear populations. Caribou and muskox in Northern Canada are species of concern and the CWS is conducting long-term studies of both species in co-operative programs with the Northwest Territories fish and wildlife service.

The CWS also carries out research in the national parks. Studies in limnology, ornithology, mammalogy and general ecosystem relationships are in progress. Long-term studies on wolf and grizzly bear ecology have just begun and a biophysical inventory of the mountain parks is continuing in Jasper and Banff national parks. A bison-livestock interaction study is proceeding in and around Wood Buffalo National Park. Shorter duration projects are defined each year and undertaken for Parks Canada according to its priorities.

The Convention on International Trade in Endangered Species of Wild Fauna and Flora was signed by Canada in July 1974. The CWS was designated the scientific and management authority for the convention in Canada. The Canada Wildlife Act, passed

by Parliament in 1973, provides the federal government and the CWS with a legislative basis for undertaking joint federal-provincial management programs. Under the act, the CWS has initiated a rare and endangered species program. Continuing studies on the wood bison, whooping crane and peregrine falcon are to be augmented with new projects on other species. The International Agreement on the Conservation of Polar Bears came into effect on May 26, 1976. Canada was the first of the five signatories to ratify it. As administrator of the Migratory Birds Convention Act the CWS, in consultation with provincial wildlife agencies, recommends annual revisions of the regulations which govern open seasons, bag limits and hunting practices. The RCMP with CWS and provincial co-operation enforces the act and regulations.

The national wildlife area program was begun by CWS in 1966 to preserve and maintain important or unique lands for wildlife. Originally, it was restricted to migratory bird habitats, but now includes land for other wildlife. Today more than 40 national wildlife areas exist across Canada and more are planned. A number of co-operative wildlife areas have also been established; these are managed jointly with the provinces. The land, its vegetation and the wildlife it supports are the main concerns. In addition, over 80 key nesting areas for migratory birds, many privately owned, have been declared sanctuaries under the Migratory Bird Sanctuary Regulations; in these areas hunting is prohibited.

The CWS conducts two annual surveys of waterfowl hunters, selected from the over half million purchasers of the Canada migratory game bird hunting permits, to obtain estimates of the species taken and the kill of migratory game birds by hunters. Other continuing projects related to migratory game birds include a national goose harvest survey, annual surveys of crop damage in the Prairie provinces and of waterfowl populations and habitat conditions in Western Canada and a program to reduce hazards caused by birds flying near airports. Bird-banding provides valuable information on migration and biology of birds, and is especially useful in waterfowl management. CWS headquarters in Ottawa keeps sets of continental banding records and controls the activities of banders operating in Canada.

Special attention is given to species greatly reduced in number or in danger of extinction. The program in which 21 young were raised from whooping crane eggs taken from the breeding grounds and incubated at the Patuxent Wildlife Research Center in Maryland is continuing. Eventually, progeny from these chicks will be released into the wild but only after a sufficiently large supply of breeding birds has been developed. Another aspect of this program is the use of sandhill cranes as foster parents to hatch whooping crane eggs. By 1979 the population of whooping cranes in the world had reached 109 — 83 in the wild and 26 in captivity.

Research continues on the effects of toxic chemicals on wildlife at various sites across the country. In Alberta, a study continues on the effect of herbicides on wildlife habitat. Field work on the relation between chemical contamination of the lower Great Lakes and the breeding success of fish-eating birds was continued under a Canada-United States Great Lakes water quality agreement. A long-term study of the breeding biology of lesser snow geese at La Pérouse Bay, Man. was begun. A research program on the effects of forest sprays on song birds in New Brunswick was continued.

Studies continued into the health of game and fur-bearing animals and rodents in Northern Canada and into parasitism in these mammals as well as in birds. Measures were taken to control anthrax among bison in Wood Buffalo National Park and in the Northwest Territories.

Under the interpretation program, the CWS operates five wildlife centres across Canada. Wye Marsh Wildlife Centre at Midland, Ont. interprets the northern hardwood biotic region; Cap Tourmente and Percé wildlife centres, both in Quebec, focus on the habitat of the greater snow geese and the natural and human history of the Atlantic gulf coast, respectively; the Prairie Wildlife Centre near Swift Current, Sask. focuses on the prairie grassland biotic region and the Creston Valley Wildlife Centre highlights the Columbia biotic region.

Research on use of the wildlife resource is a growing concern. The CWS has participated in several projects to shed light on the role of wildlife in the social and economic spheres in Canada.

The CWS was responsible for the waterfowl capability sector of the Canada Land Inventory, a federal-provincial program to gather information on how land in the settled parts of Canada is being used, and how best it could be used for agriculture, forestry, recreation and wildlife.

Provincial wildlife management

10.4.2

Newfoundland. The functions of the wildlife division are: to preserve all indigenous species from extinction; to provide other species where suitable unused habitat exists, bearing in mind the real and aesthetic values of wildlife that are important to man; to maintain all species in the greatest number possible, consistent with the habitat needs of the species and without serious conflict with the other resource needs; and to provide and regulate the harvest surplus of wildlife populations.

Newfoundland has 38 moose management areas and 15 caribou management areas. Moose and caribou populations are managed by establishing licence quotas, varying the length of open season and different bag limits. In most management areas, the licence quota consists of a number of licences permitting the taking of animals of either sex and another number permitting the taking of males only. Emphasis in research is placed on moose and caribou but investigations of ptarmigan, snowshoe hares, arctic hares, and various furbearers are also conducted. Management surveys deal primarily with the big-game species. Populations of small-game species and furbearers are monitored. In recent years, two relatively rare species, the arctic hare and pine marten, have been live trapped and released in suitable unoccupied habitat, with encouraging results.

Prince Edward Island. The fish and wildlife division of the environment department is responsible for research and management of all wildlife on Prince Edward Island. All non-migratory wildlife is the responsibility of the province while management responsibilities for fish and migratory birds are shared with the federal government. A prime responsibility is the continual monitoring of game populations to assist in setting seasons and bag limits. Attempts are being made to establish a viable population of pheasants by the introduction of a new species. Beaver transplants to vacant habitat are being carried on to increase their range. Considerable effort is expended in summer and winter black duck banding programs to determine hunting mortality of various population segments.

Habitat improvement is of prime importance for all forms of wildlife. Fishery management consists largely of building fish ladders to facilitate fish passage and other stream improvement measures such as stream bed stabilization. Efforts are continuing to establish an early run salmon stock on the Morell River.

Nova Scotia. The wildlife division of the lands and forests department is concerned with programs to ensure optimum populations of vertebrate wildlife.

Inventories are conducted annually to monitor the population status of game and non-game species. Other major activities include: the preparation of integrated resource management plans for Crown lands; wetlands management in co-operation with Ducks Unlimited (Canada); biological assessment of lakes and streams; hunter education; law enforcement; co-operative programs with the Trappers Association of Nova Scotia and Nova Scotia Wildlife Federation; maintenance of a modest put and take trout fishery; co-operation with universities in wildlife research; and the preparation and updating of legislation pertaining to wildlife.

New Brunswick. The wildlife resources of New Brunswick are the responsibility of the fish and wildlife branch of the natural resources department. Orders-in-council issued under the New Brunswick Game Act control bag limits and hunting pressure in the utilization of surplus wildlife.

Biological surveys of game animals are carried out to determine the condition of populations. Principal game populations managed are: moose, white-tailed deer, black bear, beaver, muskrat and woodcock. Research and programs to integrate forestry practices with deer winter habitat requirements will continue to be the main thrust of deer management.

The trapper information and education program initiated in 1976 is supported by the New Brunswick Trappers Association. Its primary objective includes the personal involvement of resident trappers in the wise use and management of fur resources. The current demand for long-haired furs such as bobcat, fox and fisher has diverted trapping pressure from beaver, otter, mink and muskrat.

Sport fishing contributed approximately \$20 million directly and \$17 million indirectly (indirect related purchases) to the New Brunswick economy in 1977 and 1978. Over 220,000 New Brunswick residents (licensed and unlicensed) fished in 1977 and 1978; non-resident (licensed and unlicensed) anglers totalled 8,400 in 1977 and 8,515 in 1978.

Non-residents angled 82,000 days in 1977 and 81,500 days in 1978 of which only 30,000 (36%) fished sea-run Atlantic salmon. They caught 428,000 sport fish in 1978 including brook trout, smallmouth bass, white perch, yellow perch and Atlantic salmon. Residents angled 1,356,000 days in 1977 and 1,401,000 days in 1978; they fished 102,000 days for Atlantic salmon in 1977 and 120,000 days in 1978. Brook trout, smelt and mackerel were also caught. Of New Brunswick's total angling effort in 1977 and 1978, 88% was in fresh waters and 11% in salt waters.

Quebec. The maintenance, improvement and protection of wildlife in Quebec is the responsibility of the wildlife branch of the tourism, fish and game department. The branch comprises three divisions. The wildlife management and operations division, with its regional services, is responsible for the management of wildlife and particularly of species of interest to hunters and fishermen. Biologists are assigned to nine administrative regions and their work covers the inventory and study of animal populations as well as the improvement of populations and their habitats. The fish hatchery service operates six hatcheries, inspects commercial hatcheries and controls imports of eggs and salmonids. The wildlife research branch conducts projects to improve the basic knowledge of fish and wildlife in order to help wildlife managers. The wildlife protection branch enforces fishing and hunting regulations and informs the public of the scope and importance of such regulations.

Ontario. Wildlife management in Ontario is administered by the wildlife branch of the outdoor recreation group of the ministry of natural resources. The objective is to manage, enhance and interpret wildlife populations and habitats, so as to provide optimum wildlife-based recreational and commercial opportunities and a continuous contribution to tourism and its related industries. Wildlife management is conducted through the main office, eight regional and 49 district offices.

The deer herd in Ontario has declined during recent decades, manifested by a southward retraction of 320 km in the northern limit of the range of white-tailed deer and reduced deer populations throughout the remaining range north of agricultural southern Ontario. The primary causes of the decline have been severe winters, over-harvest, predation and habitat deterioration. Herd size is now below the carrying capacity of the range in much of central and northwestern Ontario. The management program aimed at increasing the amount of food available in the summer range and in winter yards, maintaining suitable winter cover, and adjusting the length of hunting seasons in problem areas. New initiatives in deer management included: increased control of the harvest; predator control; and long-range habitat planning and manipulation. These should halt this decline and eventually increase herd size and associated recreational opportunities.

Moose management concentrated on population and harvest inventory and evaluation of the effects of various timber harvesting practices on moose range. The popularity of moose hunting remained high and more intensive management measures for moose were being formulated.

In upland game and waterfowl management, effort is directed to the maintenance and improvement of habitat. Management is carried out on areas under agreement between landowners and the province and on provincial wildlife areas. These areas have helped increase opportunities for nature study and hunting in southern areas and some of them ensure preservation of the wetland habitats important to a great variety of wildlife, especially waterfowl. Waterfowl banding, production surveys and harvest

inventory assist in developing waterfowl management programs. Improved inventories of upland game abundance are being developed for management purposes.

The major effort in fur management is directed toward beaver, with aerial censuses of beaver colonies and specimen collections by trappers. Monthly summaries of all furbearers taken by each trapper are prepared. The harvest of beaver, marten, fisher and lynx is controlled by quota. About three-quarters of the fur harvested is auctioned through the Ontario Trappers' Association Fur Sales Service in North Bay. A concerted effort to develop more humane traps was started in 1972 in co-operation with the trappers' association. Workshops on humane trapping, pelt preparation, animal biology and management practices have continued to upgrade trappers' skills and knowledge.

Endangered and non-game species management is an evolving component of Ontario's overall wildlife program. The major goal for 1979 was to develop a comprehensive philosophy and policy for non-game management.

At present, 13 species or sub-species are designated under Ontario's Endangered Species Act. No new additions to the list have been made since August 1977, but status assessments for various species are a continuing concern.

Manitoba. The mines, natural resources and environment department is responsible for programs designed to maximize the recreational and economic benefits of wildlife resources while preserving the ecological diversity of native species. Authority provided by provincial legislation (The Wildlife Act, the Predator Control Act and regulations) allows for legal protection and management of the 26 mammal, 160 bird, five reptile and three amphibian species. The federal Migratory Birds Convention Act deals with the protection of migratory game birds, migratory insectivorous birds and other migratory birds.

Wildlife authorities manage wildlife, game bird, goose and fur-bearing animal refuges and 47 wildlife management areas. Distribution of hunting and trapping pressure through definite seasons and bag limits is one management tool used. A hunter draw system is used for moose, elk and caribou. Wildlife habitat development projects continued in 1978.

A five-year federal-provincial program inaugurated in 1975 to revitalize Manitoba's primary wild fur industry through trapper assistance and wetland habitat improvement continued in 1978 with returns approaching previous record highs. Oak Hammock and Grant's Lake managed hunting areas continued to promote quality recreation and hunter-landowner co-operation. A managed wild turkey hunt was held.

Saskatchewan. The fisheries and wildlife branch of the tourism and renewable resources department administers and manages the province's fish and wildlife resources. The legislative authority is provided through the Saskatchewan Fishery Regulations and the Game and Fur Acts. By 1979 steps were under way to introduce new wildlife legislation to replace the Game and Fur Acts.

Wildlife management programs are aimed at maintaining and enhancing wildlife populations for 100,000 hunters and an even greater number of non-consumptive users. Because consumptive demands exceed the supply of several big game species, hunting has been restricted, and hunting licences allocated for these species by a computer draw. A new moose management program is being tested to alleviate some problems created by restricted seasons.

Habitat loss continues to be a major problem and initiatives are being undertaken to arrest this loss. A new habitat protection and development division was created. Aquatic habitat protection guidelines are being applied throughout the province. Funds from hunting licences have permitted acquisition of more than 25 000 ha of prime wildlife habitat. Attempts are under way to improve hunter-landowner relations with season manipulation and good hunting habits. A special program is in place to reduce grain crop losses caused by waterfowl.

Fur management stresses conservation, utilization and development of the fur resources. Training sessions update trappers on humane trapping techniques and quality pelt preparation.

Current fisheries studies evaluate reasons for fish population fluctuations and investigate productivity of selected waters. Wildlife projects are currently under way on

land use as it affects wildlife. Specific projects on the basic ecological requirements of moose and elk are nearing completion. Special fisheries and wildlife studies have been completed in connection with a comprehensive Qu'Appelle Valley land-use evaluation and development plan. Implementation of recommendations is under way.

Alberta. The management of the fish and wildlife resources of Alberta is under the jurisdiction of the fish and wildlife division of the recreation, parks and wildlife department.

The fisheries branch is responsible for the maintenance and enhancement of fish populations and habitat. Fisheries management staff at seven centres administer the fisheries resource in their areas by conducting surveys, setting catch limits and monitoring land-use developments.

Fisheries habitat protection staff continued to review applications associated with industry development projects while habitat development staff had five major projects approved for improvement of fish habitat. The fisheries research section attempted to develop a trout stocking formula for pothole fisheries; investigated the causes and possible remedies to reduce mortality of trout during transportation for stocking; and developed a method of fish tagging for aerial monitoring of fish migration. The fish culture section produced 3.66 million trout for stocking in province waters while an aquaculture specialist and a commercial fisheries co-ordinator provided liaison between the government and the private sector.

Wildlife populations are managed for aesthetic, recreational and economic purposes. To ensure sustained optimum yields and harvests, the following methods are used: determination of population inventories and production, and delineation and modification of limiting factors through habitat protection and development, intensive enforcement and public education.

Research and management efforts continued on ungulates, waterfowl and upland birds. Mapping of key habitat areas for ungulates and furbearers is now centring on the eastern slopes of the Rockies as a result of the government's zoning policy. A public opinion survey on Alberta's wildlife resources was mailed to a sample of 5,300 residents; evaluation of the survey was to be completed by late 1979. In 1978 the third

In 1978 the average value of a white bear pelt increased to \$718.33 from \$589.18 a year earlier. Average value of a silver fox pelt went up to \$75.48 from \$53.20. Higher prices for such wildlife furs and world interest in Canadian-designed fur garments had trappers extending their traplines and fur farmers seeking new breeding stock.

annual upland bird game questionnaire was mailed to a random selection of Alberta hunters to determine harvest and recreational opportunity provided by the hunting of pheasant, Hungarian partridge, ptarmigan and ruffed, spruce, blue, sage and sharp-tailed grouse. Results from the survey indicated approximately 482,000 bird game hunter-days. Big-game hunter-days in 1978 totalled 876,000 for moose, white-tailed deer and mule deer.

British Columbia. The fish and wildlife branch of the environment ministry is responsible for the protection, enhancement and use of wildlife and freshwater fish resources of British Columbia. Administrative and technical headquarters are in Victoria; seven regional headquarters in the main centres of population, 59 district offices, three fish hatcheries and a number of permanent field stations operate throughout the province. The branch licenses hunters and anglers and enforces closed seasons, bag limits and other measures. It licenses and regulates trapping of fur-bearing animals, commercial propagation of game birds and fish, and activities of big-game guides. The branch enhances the abundance and health of desirable species of animals by the acquisition of key areas of range for big game and waterfowl and by the stocking of lakes.

The branch objective is to contribute to the economy of British Columbia through wise management of game resources and non-tidal fisheries, paying attention to such matters as pollution and integrated use of lands for forestry, agriculture, transportation, mining and wildlife. The branch conducts programs of education and information to make the public aware of the value of wildlife resources and of the principles of wise management.

Territorial wildlife management

10.4.3

Yukon. The Yukon wildlife branch of the tourism, conservation and information department manages Yukon's wildlife resource. It administers and enforces game and fur export ordinances and helps federal agencies enforce the Migratory Birds Convention Act, Canada Wildlife Act, International Agreement on the Conservation of Polar Bears, International Agreement of Trade in Endangered Species, the Game Export Act and the Freshwater Fishery Regulations. With headquarters in Whitehorse, it has regional offices in Dawson City, Mayo, Ross River, Watson Lake and Haines Junction.

The branch promotes judicious use of big-game species, upland game birds and sport fish for residents and non-residents, licensing hunters and anglers and enforcing closed seasons, bag limits and other regulatory measures. It licenses and regulates trapping of fur-bearing animals and activities of outfitters and guides. To increase knowledge about wildlife species and provide the basis for proper management, it conducts and supports biological research and public educational programs. In 1977 it issued 405 non-resident licences and 3,870 resident licences for hunting big game and about 15,000 fishing licences.

Northwest Territories. The NWT wildlife service manages the wildlife resources of the Northwest Territories, and provides opportunities for native peoples to follow their traditional pursuits of hunting, trapping and fishing. It has headquarters in Yellowknife, four regional offices at Fort Smith, Inuvik, Frobisher Bay, and Rankin Inlet, and 29 area offices throughout the territories.

Wildlife management is carried out mainly by harvest monitoring and control. Harvest quotas are allocated by management zones. Management studies are conducted primarily to establish the abundance, productivity and seasonal distribution of large mammals, including the polar bear.

Trapping is encouraged through a series of programs designed to assist native peoples to return to the land. Included are trappers' incentive grants (a fur subsidy program based on a percentage of the season's harvest), fur marketing service, and an outpost camp program which provides financial assistance to groups who wish to move back to the land and live off the natural resources available through hunting and trapping.

The service is responsible for administration of sports fishing licences. Under permit from the federal fisheries and marine service, fish and wildlife officers monitor commercial fisheries and the testing of lakes and rivers to determine the viability of commercial operations to supply local domestic markets.

The NWT wildlife service is involved in environmental management through participation in various federal-territorial advisory committees. Close liaison is maintained with hunter and trapper associations as a link between the resource-dependent residents and the companies involved in exploration and development of non-renewable resources.

A Northwest Territories game advisory council advises the commissioner of the Northwest Territories on matters pertaining to wildlife policy and legislation. All members of the council are northern residents and represent native hunters and trappers and the outdoor recreation industry.

Sources

- 10.1 - 10.1.2 Information Services, Canadian Forestry Service, Department of the Environment.
- 10.1.3 Information Services, Canadian Forestry Service, Department of the Environment; supplied by the respective provincial government departments.
- 10.1.4 Manufacturing and Primary Industries Division, Economic Statistics Field, Statistics Canada.
- 10.2 - 10.2.1 Communications Branch, Department of Fisheries and Oceans.
- 10.2.2 Supplied by the respective provincial government departments.
- 10.2.3 Manufacturing and Primary Industries Division, Economic Statistics Field, Statistics Canada.
- 10.3 Agriculture Division, Social Statistics Field, Statistics Canada; Communications Branch, Department of Fisheries and Oceans.
- 10.4 - 10.4.1 Information Directorate, Department of the Environment.
- 10.4.2 Supplied by the respective provincial government departments.
- 10.4.3 Supplied by the respective territorial government departments.

Tables

..	not available	e	estimate
...	not appropriate or not applicable	p	preliminary
—	nil or zero	r	revised
--	too small to be expressed	certain tables may not add due to rounding	

10.1 Canada's forest inventory, 1976

Province or territory	Forest land '000 km ²		Production forest land tenure '000 km ²			Volume ^a '000 000 m ³		Total
	Total ¹	Production ²	Crown provincial	Crown federal	Privately owned	Soft-woods	Hard-woods	
Newfoundland	338	335	327	--	8	573	47	620
Prince Edward Island	3	..	..	..	..	..	..	..
Nova Scotia	41	40	10	--	30	151	65	216
New Brunswick	66	65	28	--	36	482	185	667
Quebec	614	435	397	--	37	1 906	856	2 762
Ontario	570	570	515	6	49	2 589	1 681	4 270
Manitoba	257	251	245	1	5	410	163	573
Saskatchewan	140	124	121	2	..	274	185	459
Alberta	341	318	315	3	..	939	592	1 531
British Columbia	521	482	474	3	5	7 561	205	7 766 ⁴
Yukon	219	219	..	219	..	214	39	253
Northwest Territories	307	95	..	95	..	103	61	164
Canada	3 417 ⁵	2 934	2 432	329	170	15 202 ⁶	4 079	19 281

¹Land used primarily for forestry, capable of producing wood volume of 30 m³/ha or more.

²Productive forest land available for growing and harvesting forest crops. Excludes reserved forest land by law not available, as in national parks, some provincial parks, game refuges, water conservation areas, nature preserves and military areas.

³Volume of main tree stems in stands.

⁴Mature timber only.

⁵Includes 3 000 km² in PEI and 179 000 km² in Que. — no data available.

⁶Includes volumes in Nfld., Que. and Ont. — no species breakdowns available.

10.2 Forest utilization, 10-year average 1968-77

Item	Usable wood '000,000 m ³	Percentage of total depletion
Products utilized		
Logs and bolts ¹	83.6	65.1
Domestic use	82.9	64.5
Exported	0.7	0.6
Pulpwood	39.9	31.0
Domestic use	38.3	29.8
Exported	1.6	1.2
Fuelwood (incl. wood for charcoal)	3.9	3.0
Other products	1.1	0.9
Total utilization	128.5	100.0

¹Includes some wood used in pulp manufacture.

10.3 Forest fire losses, 1975-77

Province or territory	1975		1976		1977	
	Fires No.	Area burned ha	Fires No.	Area burned ha	Fires No.	Area burned ha
Newfoundland	253	174 473	348	196 461	166	1 337
Prince Edward Island	46	106	30	115	60	530
Nova Scotia	731	2 828	541	17 535	633	1 170
New Brunswick	475	2 745	411	4 616	520	1 204
Quebec	1 963	17 110	1 108	465 551	1 362	31 934
Ontario	3 146	16 856	3 985	544 108	2 049	231 550
Manitoba	358	23 344	1 128	65 095	856	416 317
Saskatchewan	287	95 047	636	90 985	397	130 128
Alberta	693	5 790	774	23 032	556	15 738
British Columbia	2 711	24 262	888	56 947	1 854	3 796
Yukon	166	82 890	112	52 807	126	277 075
Northwest Territories	295	576 144	313	641 832	309	321 802
Other federal lands	100	272	84	125	72	5 593
Total	11 224	1 031 867	10 358	2 159 209	8 960	1 438 174

10.4 Volume of wood cut, by province, 1974-77 (thousand cubic metres)

Province or territory	1974	1975	1976	1977
Newfoundland	3 211	2 452	2 345	2 195
Prince Edward Island	190	167	164	139
Nova Scotia	3 998	3 540	3 455	3 676
New Brunswick	8 781	6 906	7 479	7 702
Quebec	32 712	28 407	29 062	31 064
Ontario	18 868	14 215	17 878	21 818
Manitoba	2 101	2 022	1 742	1 784
Saskatchewan	2 778	2 313	2 866	3 667
Alberta	5 057	4 964	5 627	6 371
British Columbia	60 086	50 077	69 528	69 971
Yukon and Northwest Territories	147	198	127	133
Canada	137 929	115 263	140 275	148 519

10.5 Volume of wood cut, by type of product, 1974-77 (thousand cubic metres)

Type of product	1974	1975	1976	1977
Logs and bolts	85 295	73 543	98 279	106 114
Pulpwood	48 034	37 063	36 836	37 582
Fuelwood	3 512	3 765	3 900	3 681
Poles and piling	72	¹	¹	¹
Round mining timber	55	²	²	²
Fence posts	462	²	²	²
Miscellaneous roundwood	499	891	1 260	1 141
Total	137 929	115 263	140 275	148 519

¹Included with logs and bolts.²Included with miscellaneous roundwood.**10.6 Lumber production and shipments and value of all shipments of the sawmill and planing mill industry, by province, 1976 and 1977**

Year and province or territory	Lumber Production m ³	Quantity shipped ¹ m ³	Value of shipments ¹ \$ '000	Value of shipments ¹ of goods of own manufacture \$ '000
1976	9 460	9 304	739	3,496
Newfoundland				²
Prince Edward Island				²
Nova Scotia	296 982	285 597	23,467	32,922
New Brunswick	742 541	759 066	52,152	88,919
Quebec	5 085 009	5 443 590	331,011	454,259
Ontario	2 150 266	2 041 281	142,191	222,918
Manitoba	155 799	155 330	9,959	²
Saskatchewan	335 607	346 589	19,293	24,023
Alberta	1 053 420	1 207 470	68,043	84,866
British Columbia	23 174 578	23 438 208	1,555,955 [*]	1,946,172
Yukon and Northwest Territories	7 122	7 122	410	1,228
Canada	33 010 783	33 693 557	2,203,220	2,878,325
1977 ²				
Newfoundland	4 953	5 036	625	4,708
Prince Edward Island				²
Nova Scotia	330 049	305 626	26,904	34,697
New Brunswick	726 804	752 334	55,411	90,421
Quebec	6 148 854	6 525 062	426,735	577,447
Ontario	2 702 991	2 415 918	187,444	290,277
Manitoba	170 309	175 413	12,451	²
Saskatchewan	458 674	468 922	33,077	38,623
Alberta	1 219 755	1 435 338	94,820	119,732
British Columbia	26 769 414	26 920 275	2,121,387	2,492,602
Yukon and Northwest Territories	13 861	10 982	785	1,057
Canada	38 545 664	39 014 906	2,959,639	3,672,730

¹Shipment figures contain some duplication because sales of lumber from one sawmill to another are reported as shipments by both establishments.^{*}Confidential.

10.7 Lumber shipments¹ of the sawmill and planing mill industry, by species, 1975-77

Kind of wood	1975 ^r		1976		1977 ^p	
	Quantity m ³	Value \$ '000	Quantity m ³	Value \$ '000	Quantity m ³	Value \$ '000
Spruce and balsam fir	13 964 201	710,561	17 574 231	1,019,934	21 003 710	1,403,754
Douglas fir	2 510 161	150,158	3 214 103	218,701	3 186 879	263,240
Hemlock	3 548 530	216,489	5 624 822	385,310	6 869 593	551,965
Cedar (red and white)	1 945 233	158,613	2 592 013	271,593	2 534 806	332,200
White and red pine	470 822	40,477	570 705	51,999	593 026	59,298
Jack pine and lodgepole pine	2 408 381	114,737	2 990 391	162,280	3 666 260	243,419
Maple	364 518	29,067	353 057	30,010	325 299	29,901
Yellow birch	219 382	18,658	224 829	20,893	208 037	20,177
Other	485 740	34,490	549 406	42,500	627 296	55,685
Total	25 916 968	1,473,250	33 693 557	2,203,220	39 014 906	2,959,639

¹See footnote 1, Table 10.6.

10.8 Veneer and plywood shipments, by type, 1975-77

Type	1975 ^r		1976		1977	
	Quantity m ²	Value \$ '000	Quantity m ²	Value \$ '000	Quantity m ²	Value \$ '000
Veneer						
Softwoods	505 882	30,439	651 308	43,232	749 792	48,942
Hardwoods	98 894	35,589	110 742	42,874	127 173	48,286
Softwood plywood	1 979 069	280,104	2 134 367	363,693	2 358 628	406,227
Hardwood plywood	180 363	50,105	189 655	59,225	194 034	65,878

10.9 Pulp shipments and production, 1975-78

Item	1975	1976	1977	1978 ^p
Mill shipments of pulp ¹	'000 t \$ '000	5 650 1,982,617	6 768 2,254,714	7 066 2,270,938
Groundwood pulp	'000 t \$ '000	221 42,908	261 47,410	311 49,272
Chemical pulps	'000 t \$ '000	5 429 1,939,709	6 507 2,207,304	6 755 2,221,666
Pulp production ²	'000 t	15 113	17 946	18 168
Quebec	"	5 198	5 882	5 860
Ontario	"	2 540	3 060	3 662
British Columbia	"	3 998	5 320	4 831
Other provinces ³	"	3 377	3 685	3 815

¹Includes screenings.

²The differences between these figures and the quantities of mill shipments represent the amounts of pulp further manufactured by the reporting companies.

³Prince Edward Island is the only province in which there is no production.

10.10 Shipments of basic paper and paperboard, by type and by province, 1975-77

Type and province	1975	1976	1977
TYPE			
Newsprint paper	'000 t \$ '000	7 046 1,847,343	7 953 2,179,966
Book and writing paper	'000 t \$ '000	680 346,490	818 403,717
Wrapping paper	'000 t \$ '000	408 166,504	518 204,256
Paperboard	'000 t \$ '000	1 504 412,441	1 784 500,120
All other papers	'000 t \$ '000	254 88,693	268 95,256
Total	'000 t \$ '000	9 892 2,861,471	11 341 3,383,315
PROVINCE			
Quebec	'000 t \$ '000	4 676 1,335,388	5 151 1,510,554
Ontario	'000 t \$ '000	2 053 645,841	2 480 820,455
British Columbia	'000 t \$ '000	1 437 420,619	1 905 559,634
Other provinces ¹	'000 t \$ '000	1 726 459,623	1 805 492,671

¹Prince Edward Island is the only province in which there is no production.

10.11 Exports of pulp and newsprint to Britain, United States and all countries, 1975-78

Commodity and year	Britain		United States		All countries	
	Quantity t	Value \$ '000	Quantity t	Value \$ '000	Quantity t	Value \$ '000
Pulp						
1975	403 787	145,412	2 654 164	991,879	4 963 550	1,817,998
1976	480 168	169,965	3 217 807	1,165,432	6 113 748	2,173,319
1977	438 149	155,409	3 343 283	1,218,689	6 091 822	2,156,028
1978	409 183	128,611	3 440 789	1,175,954	6 637 573	2,179,270
Newsprint						
1975	340 266	102,416	5 103 920	1,357,892	6 348 654	1,741,990
1976	432 769	130,055	5 675 372	1,595,477	6 997 267	1,997,371
1977	430 259	154,257	5 748 532	1,869,417	7 265 731	2,381,265
1978	419 437	176,894	6 404 979	2,333,814	7 868 346	2,886,214

10.12 Imports and exports of fish products in quantities and values, 1977 and 1978

Product group	Imports 1977		1978		Exports 1977		1978	
	Quantity t	Value \$	Quantity t	Value \$	Quantity t	Value \$	Quantity t	Value \$
Seafish, fresh or frozen	37 550	37,359	32 832	43,372	...	...	...	...
Freshwater fish, fresh or frozen	3 188	5,121	2 130	5,730	...	...	...	...
Fish steaks, blocks, fresh or frozen	8 889	13,591	5 468	12,259	...	...	...	...
Seafish, whole or dressed, fresh	...	...	...	...	40 650	22,336	35 186	24,042
Freshwater fish, whole or dressed, fresh	...	...	...	...	7 510	11,870	8 793	13,918
Seafish, whole or dressed, frozen	...	...	...	...	58 008	113,014	71 557	186,085
Freshwater fish, whole or dressed, frozen	...	...	...	...	8 665	11,158	12 417	17,502
Seafish filets, fresh	...	...	...	...	4 957	11,547	4 399	11,726
Freshwater fish filets, fresh	...	...	...	...	735	2,833	720	2,787
Seafish filets, frozen	...	...	...	...	92 084	145,462	99 468	206,042
Freshwater fish filets, frozen	...	...	...	...	2 139	9,344	2 794	10,838
Seafish blocks, frozen	...	...	...	...	39 005	73,440	41 559	87,005
Freshwater fish blocks, frozen	...	...	...	...	2 386	2,900	3 186	3,826
Smoked fish	266	449	175	446	4 603	5,337	3 284	5,513
Salted or dried fish	1 197	2,879	1 594	3,488	...	...	...	...
Salted or dried groundfish	...	...	...	...	21 204	41,576	24 335	57,444
Pickled fish	272	385	305	437	...	...	...	...
Cured and pickled fish	...	...	...	...	28 804	17,963	29 181	30,809
Canned fish	13 474	34,927	13 249 ¹	45,883	21 191	71,369	19 648	71,380
Shellfish, fresh or frozen	16 619	94,243	19 402	105,299	36 730	135,540	63 755	212,961
Canned shellfish	6 608	29,286	5 870	29,062	1 245	9,928	2 044	15,710
Fish roe	...	...	...	...	14 423	103,099	11 640	140,098
Fish meal	464	153	342	91	27 626	11,353	35 565	16,525
Fish oil	410	630	654	833	16 040	3,950	9 397	4,633
Miscellaneous fishery products ²	17 464	1,766	24 798	2,572	20 220	11,702	24 114	15,389
Total	106 401	220,789	106 819	249,472	448 225	815,721	503 042	1,134,233

¹Quantity in 1978 excludes canned anchovy and canned sardine which are reported in number of boxes, and are not comparable with 1977 quantities.

²Quantity excludes seal skins which are reported in number of skins.

10.13 Products and marketed values of fish, 1978

Species	Atlantic ^P		Pacific		Canada ^P	
	Quantity t	Value \$	Quantity t	Value \$	Quantity t	Value \$
SEAFISH						
Fresh and frozen, whole or dressed	66 600	37,950	51 967	185,023	118 567	222,973
Halibut	900	2,950	3 081	19,614	3 981	22,564
Herring	37 000	10,800	17 770	13,548	54 770	24,348
Salmon	1 200	6,460	27 001	149,000	28 201	155,460
Fresh and frozen filets and blocks	199 600	391,400	7 423	17,755	207 023	409,155
Cod	60 000	124,550	1 822	4,885	61 822	129,435
Redfish	17 350	37,700	2 284	5,317	19 634	43,017
Flounder and sole	24 950	70,000	870	3,505	25 820	73,505
Fresh and frozen sticks and portions	11 000	28,800	478	1,393	11 478	30,193
Smoked	4 900	7,000	541	3,881	5 441	10,881
Herring bloaters	3 400	3,500	—	—	3 400	3,500
Salmon	10	100	330	3,127	340	3,227
Salted	28 000	69,500	895	623	28 895	70,123
Cod	23 000	60,700	—	—	23 000	60,700
Cured or pickled	32 300	29,300	912	6,023	33 212	35,323
Herring	26 900	25,500	313	826	27 213	26,326
Canned	14 000	42,900	24 670	115,921	38 670	158,821
Herring and sardines	7 670	21,850	135	7	7 805	21,857
Salmon	—	—	24 535	115,914	24 535	115,914
Meal and oil	71 900	19,900	13 887	6,083	85 787	25,983
Groundfish	55 300	15,650	—	—	55 300	15,650
Herring	13 300	3,150	9 454	4,244	22 754	7,394
Roe	600	2,950	9 157	157,466	9 757	160,416
Herring	50	300	7 271	133,264	7 321	133,564
Other seafish products	14 500	19,830	11 597	11,257	26 097	31,087

10.13 Products and marketed values of fish, 1978 (concluded)

Species	Atlantic ^P		Pacific		Canada ^P	
	Quantity t	Value \$	Quantity t	Value \$	Quantity t	Value \$
SHELL FISH						
Fresh and frozen, in shell	36 900	88,900	2 841	5,799	39 741	94,699
Lobsters	10 900	63,100	—	—	10 900	63,100
Squid	23 470	22,310	—	—	23 470	22,310
Crabs	500	2,570	654	1,428	1 154	3,998
Fresh and frozen, shucked	29 600	205,600	1 110	5,426	30 710	211,026
Scallops	14 700	101,700	—	—	14 700	101,700
Oysters	—	—	551	1,077	551	1,077
Shrimps and prawns	2 230	13,700	406	2,827	2 636	16,527
Canned	2 390	25,700	675	706	3 065	26,406
Clams	430	2,500	520	675	950	3,175
Crabs	1 500	18,000	155	31	1 655	18,031
Other shellfish products	5 800	4,270	53	201	5 853	4,471
Miscellaneous (seal skins, quantity in number)	138,200	2,500	—	—	138,200	2,500
Total, sea fisheries	518 090	976,500	126 206	517,557	644 296	1,494,057
Inland fisheries	...	...	...	...	41 000 ^e	63,100 ^e
TOTAL	...	...	...	...	685 296 ^e	1,557,157 ^e

^PConfidential.**10.14 Landings of sea and inland fish and other sea products, by province, 1976-78**

Province or territory	1976		1977		1978	
	Quantity t	Value \$ '000	Quantity t	Value \$ '000	Quantity t	Value \$ '000
Newfoundland	339 211	64,716	392 786	85,497	437 612 ^P	110,923 ^P
Prince Edward Island	17 134	12,719	19 801	15,164	25 660	23,376
Nova Scotia	367 883	106,686	407 074	133,145	444 869	195,388
New Brunswick	116 900	25,082	131 658	34,367	153 673	49,975
Quebec	42 598	15,886	54 999	21,196	67 998	30,234
Ontario	18 645	12,513	23 529	14,555	25 413	17,161
Manitoba	10 832	7,062	12 540	9,134	...	...
Saskatchewan	5 104	2,277	5 214	2,726	...	...
Alberta	1 020	579	1 131	634	...	...
British Columbia ¹	180 902	141,851	204 545	167,905	199 183	252,192
Yukon and Northwest Territories	1 232	716	1 631	1,181	...	...
Canada	1 101 461	390,087	1 254 908	485,504	1 375 067 ^e	692,750 ^e
Seafish	1 061 794	365,941	1 207 619	456,157	1 326 067	660,750
Inland fish	39 667	24,146	47 289	29,347	49 000 ^e	32,000 ^e

Quantity includes fish and shellfish only. Value also includes marine plants, aquatic mammals and livers.

¹Includes halibut landed in United States ports.**10.15 Landings of the chief commercial fish, 1976-78**

Area and species	1976		1977		1978	
	Quantity t	Value \$ '000	Quantity t	Value \$ '000	Quantity t	Value \$ '000
ATLANTIC COAST						
Groundfish	469 666	93,598	515 355	120,968	601 677 ^P	158,888 ^P
Catfish	4 115	508	3 930	559	3 280	530
Cod	193 550	42,994	237 622	61,743	291 926	84,159
Flounder and sole	110 373	20,382	111 081	23,436	107 761	23,895
Haddock	19 326	8,142	26 832	11,408	43 015	18,605
Hake	10 577	1,720	11 635	2,041	11 094	2,139
Halibut	1 322	2,137	1 498	2,332	1 675	3,117
Pollock	23 238	3,362	25 948	4,065	27 520	5,133
Redfish	89 654	11,448	66 594	9,781	73 752	12,554
Other	17 511	2,905	30 215	5,603	41 654	8,756
Pelagic and estuarial	270 776	29,415	287 028	41,357	309 403	66,524
Alewives	5 488	550	7 698	710	7 626	966
Herring ¹	225 461	15,833	228 993	24,044	244 191	42,380
Mackerel	15 755	2,083	22 511	2,563	24 834	3,805
Salmon	2 196	4,270	2 134	5,488	1 313	4,460
Smelts	2 151	592	1 941	551	2 222	820
Swordfish	61	97	117	216	3 053	6,011
Other	19 664	5,990	23 634	7,785	26 164	8,082
Molluscs and crustaceans	140 450	95,652	200 691	120,211	215 804	176,059
Clams	2 395	988	3 372	1,194	3 889	1,603
Lobsters	16 082	46,045	17 833	56,614	19 086	75,248
Oysters	1 113	522	993	556	1 483	983
Scallops	93 400	38,880	116 849	44,092	109 403	63,478
Other	27 460	9,217	61 644	17,755	81 943	34,747
Other ²	—	5,425	—	5,716	—	7,087
Total, Atlantic Coast	880 892	224,090	1 003 074	288,252	1 126 884	408,558

10.15 Landings of the chief commercial fish, 1976-78 (concluded)

Area and species	1976		1977		1978	
	Quantity t	Value \$'000	Quantity t	Value \$'000	Quantity t	Value \$'000
PACIFIC COAST						
Groundfish	31 349	21,056	29 881	18,332	32 538	25,946
Cod (gray)	9 663	2,227	7 352	2,083	6 475	2,271
Flounder and sole	5 195	1,468	3 871	1,266	3 159	1,267
Halibut ^a	7 349	15,005	5 334	11,207	5 216	16,835
Lingcod	1 897	886	1 874	1,157	1 572	1,279
Sablefish	643	447	856	663	667	971
Other	6 602	1,023	10 594	1,956	15 449	3,323
Pelagic and estuarial	140 546	116,113	165,942	143,297	158 154	218,208
Herring	81 105	23,442	97 172	32,461	81 400	56,817
Salmon	57 462	91,942	65 582	108,725	70 604	158,164
Chum	10 922	14,835	6 032	7,905	15 855	33,336
Coho	9 322	21,331	9 857	22,671	9 152	27,269
Pink	17 056	12,124	24 723	22,262	15 331	12,835
Sockeye	12 339	20,656	17 388	32,218	22 321	55,181
Spring	7 776	22,919	7 522	23,589	7 887	29,461
Other	47	77	60	80	58	82
Other	1 979	729	3 188	2,111	6 150	3,227
Molluscs and crustaceans	9 007	4,682	8 722	6,276	8 491	8,038
Clams	1 179	340	1 634	634	2 603	1,403
Crabs	995	1,044	1 030	1,190	1 176	1,802
Oysters	3 036	887	2 805	981	2 613	1,021
Shrimps and prawns	3 503	1,532	2 801	1,714	1 569	1,901
Other	294	879	452	1,757	530	1,911
Total, Pacific Coast	180 902	141,851	204 545	167,905	199 183	252,192
INLAND						
Freshwater fish	37 104	23,500	44 311	28,631	..	..
Bass	614	620	458	552	..	..
Catfish	465	318	512	359	..	..
Herring, lake (cisco) and tullibee	2 073	1,678	1 923	1,407	..	..
Perch	3 322	5,141	4 794	5,772	..	..
Pickercel (yellow)	4 572	5,491	5 697	7,993	..	..
Pike	3 383	876	3 888	958	..	..
Saugers	1 689	1,456	1 595	1,689	..	..
Smelts	8 276	1,356	10 680	1,636	..	..
Sturgeon	77	157	76	173	..	..
Trout	840	494	968	598	..	..
Whitefish	7 852	5,140	9 214	6,361	..	..
Other	3 941	773	4 506	1,133	..	..
Other ^a	2 563	646	2 978	716	..	..
Total, Inland	39 667	24,146	47 289	29,347	49 000 ^c	32,000 ^c
Total	1 101 461	390,087	1 254 908	485,504	1 375 067 ^c	692,750 ^c

¹Includes sardines.²Quantity not shown due to different units used in measurement. Value includes livers, scales, seaweeds, and seals.³Includes landings by Canadian fishermen at United States ports.⁴Seafish caught inland.

10.16 Market value of all fishery products, by area and species, 1976 and 1977 (thousand dollars)

Area and species		1976	1977	Area and species		1976	1977
ATLANTIC COAST				PACIFIC COAST			
Groundfish	289,247		359,667	Groundfish	35,380		31,003
Catfish	2,179		2,101	Cod (gray)	7,236		5,530
Cod	101,015		150,596	Flounder and sole	4,102		3,415
Flounder and sole	66,586		70,638	Halibut ^a	18,445		12,684
Haddock	16,726		21,888	Lingcod	1,464		1,340
Hake	2,749		4,243	Sablefish	956		1,614
Halibut	2,972		3,074	Other	3,177		6,420
Pollock	9,637		12,130	Pelagic and estuarial	254,667		321,956
Redfish	48,747		39,780	Herring	64,729		91,704
Other	38,636		55,217	Salmon	189,203		229,839
Pelagic and estuarial	105,233		150,233	Chum	27,075		16,676
Alewives	1,120		1,196	Coho	30,912		35,431
Herring (includes sardines)	70,850		104,712	Pink	37,085		59,217
Mackerel	6,130		6,257	Sockeye	45,666		65,922
Salmon	6,037		6,624	Spring	31,312		36,889
Smelts	1,394		971	Other	17,153		15,704
Tuna	16,751		24,903	Other	735		413
Other	2,951		5,570	Molluscs and crustaceans	10,083		9,295
Molluscs and crustaceans	189,721		205,860	Clams	1,185		1,645
Clams	1,031		3,577	Crabs	2,258		2,690
Crabs	22,746		25,998	Oysters	1,485		1,031
Lobsters	80,583		67,323	Shrimps and prawns	3,749		1,521
Oysters	1,297		753	Other	1,406		2,408
Scallops	74,020		77,060	Other sea products	617		2,547
Other	10,044		31,149	Total, Pacific Coast	300,747		364,801
Other sea products	16,744		34,480	Total, Inland	49,288		59,458
Total, Atlantic Coast ¹	600,945		750,240	Total	950,980		1,174,499

¹Excludes duplication.²Includes halibut landed by Canadian fishermen in United States ports.

10.17 Pacific Coast production of canned salmon, 1976 and 1977

Kind	1976		1977	
	Quantity 21.8-kg cases	Value \$'000	Quantity 21.8-kg cases	Value \$'000
Chum	85,540	5,722	61,395	4,383
Coho	70,713	6,768	74,180	7,715
Pink	483,082	35,351	686,911	52,080
Sockeye	377,780	43,395	494,215	56,146
Spring	11,176	1,038	29,439	2,596
Steelhead	166	11	826	67
Total	1,028,457	92,285	1,346,966	122,987

10.18 Atlantic Coast production of frozen fillets and fish blocks, 1976 and 1977

Area and species	1976		1977	
	Quantity t	Value \$'000	Quantity t	Value \$'000
NEWFOUNDLAND	64 087	117,265	71 222	147,221
Cod	20 132	34,922	28 884	58,937
Haddock	50	99	155	358
Redfish	10 420	19,532	7 993	16,883
Flatfish	24 455	55,164	25 505	61,827
Other	9 030	7,548	8 685	9,216
MARITIMES ¹	60 691	75,568	73 732	120,360
Cod	10 618	17,494	15 364	32,370
Haddock	3 661	7,573	5 835	14,881
Redfish	11 955	20,121	7 366	14,762
Flatfish	5 481	11,844	5 353	14,412
Other	28 976	18,536	39 814	43,935
QUEBEC	4 044	7,211	7 567	14,496
Cod	1 207	2,095	2 748	5,412
Redfish	1 793	3,343	2 613	5,054
Flatfish	812	1,659	1 634	3,626
Other	232	114	572	404
TOTAL, ATLANTIC COAST ¹	128 822	200,044	152 521	282,077
Cod	31 957	54,511	46 996	96,719
Haddock	3 711	7,672	5 990	15,239
Redfish	24 168	42,996	17 972	36,699
Flatfish	30 748	68,667	32 492	79,865
Other	38 238	26,198	49 071	53,555

¹Data slightly overstated due to interprovincial shipments included in the Maritimes.**10.19 Pelts of wildlife fur-bearing animals taken, by kind, years ended June 30, 1976-77 and 1977-78**

Kind	1976-77 ¹ fur season			1977-78 fur season		
	Pelts No.	Total value \$	Average value \$	Pelts No.	Total value \$	Average value \$
Badger	6,834	261,713	38.30	5,279	295,326	55.94
Bear						
White	522	307,552	589.18	523	375,685	718.33
Black or brown	3,402	149,444	43.93	3,170	146,927	46.35
Grizzly	6	1,350	225.00	24	6,912	288.00
Beaver	404,625	9,836,998	24.31	397,125	7,963,640	20.05
Cougar	—	—	—	37	5,008	135.35
Coyote	65,819	3,933,303	59.76	69,786	4,037,039	57.85
Ermine (weasel)	103,008	106,215	1.03	67,678	95,789	1.42
Fisher	9,664	921,795	95.38	8,798	827,142	94.01
Fox						
Blue	185	5,814	31.43	136	4,451	32.73
Cross and red	52,914	3,049,971	57.64	58,711	4,189,829	71.36
Silver	868	46,176	53.20	723	54,569	75.48
White	36,655	1,311,710	35.79	33,126	1,046,706	31.60
Not specified	11,674	604,130	51.75	14,299	916,852	64.12
Lynx	15,132	3,317,503	219.24	21,131	5,643,486	267.07
Marten	102,628	2,044,140	19.92	115,905	2,502,606	21.59
Mink	116,537	2,292,316	19.67	111,467	2,009,965	18.03
Muskrat	2,554,879	10,719,316	4.20	1,754,957	8,320,955	4.74
Otter	19,922	1,375,430	69.04	20,418	1,312,942	64.30
Rabbit	1,547	356	0.23	1,267	555	0.44
Raccoon	99,339	2,212,625	22.27	116,658	2,761,987	23.68
Seals						
Fur, North Pacific ¹	5,181	330,185	63.73	5,144	337,833	65.68
Hair	186,491	3,416,614	18.32	187,980	3,198,276	17.01
Skunk	1,256	2,794	2.22	908	1,859	2.05
Squirrel	821,829	643,716	0.78	380,862	533,166	1.40
Wildcat	3,459	320,216	92.57	3,790	471,650	124.45
Wolf	6,150	388,569	63.18	6,222	481,729	77.42
Wolverine	925	168,897	182.59	826	132,588	160.52
Total	4,631,451	47,768,848	...	3,386,950	47,675,472	...

¹Commonly known as Alaska fur seal; value figures are the net returns to the Canadian government for pelts sold.

10.20 Value of fur pelts produced by province, 1975-78 (dollars)

Province	Value of wildlife pelts produced			Value of mink pelts produced on fur farms ¹		
	1975-76	1976-77	1977-78	1976	1977	1978
Newfoundland	1,639,825	1,902,187	2,371,450	—	—	—
Prince Edward Island	104,861	125,934	149,401	228,309	222,792	304,966
Nova Scotia	501,906	828,587	1,043,046	3,106,370	3,398,489	5,741,484
New Brunswick	582,412	702,451	1,402,170	286,317	296,627	542,569
Quebec	4,169,987	5,936,322 ^r	8,167,582	2,440,972	2,504,718	4,472,154
Ontario	7,976,545	11,071,467 ^r	10,743,316	10,782,325	10,915,371	18,825,894
Manitoba	4,316,986	5,582,231	5,116,082	1,320,182	1,600,006	2,614,299
Saskatchewan	4,376,192	6,759,941	5,383,245	251,904	247,860	410,586
Alberta	4,967,840	7,376,561	6,333,642	1,460,296 ^r	1,454,105	2,263,366
British Columbia	1,832,071	2,095,691	2,109,335	3,938,203	4,248,288	7,216,847
Yukon	367,677	430,104	3,843,633	—	—	—
Northwest Territories	2,742,484	4,317,187	420,009	—	—	—
Canada	34,167,853 ^a	47,768,848 ^a	47,675,472 ^a	23,814,878 ^r	24,888,256	42,392,165

¹Fur farm data are for calendar years.^aIncludes hair seal from the Maritime provinces and Alaska fur seal.**10.21 Exports and imports of furs, by kind, years ended June 30, 1976-77 and 1977-78 (thousand dollars)**

Kind of fur	1976-77 fur season			1977-78 fur season		
	Britain	United States	All countries	Britain	United States	All countries
EXPORTS						
Undressed						
Beaver	1,130	763	8,970	1,295	825	7,999
Chinchilla	5	186	197	—	150	150
Ermine (weasel)	195	3	208	102	7	117
Fisher	11	592	949	—	505	1,036
Fox, all types	2,126	1,863	7,589	2,698	2,089	10,543
Lynx	—	2,723	3,865	52	3,594	6,078
Marten	171	1,497	2,029	504	1,512	2,726
Mink	752	9,704	16,173	689	12,311	18,348
Muskrat	5,692	486	9,830	5,100	650	9,279
Otter	5	129	265	—	40	437
Rabbit	—	34	62	4	184	187
Seal	906	10	4,612	525	—	5,557
Squirrel	561	—	569	513	2	586
Wolf	1,067	1,167	4,312	1,126	1,124	5,795
Other	1,586	915	8,863	2,139	1,569	13,472
Dressed						
Mink	1	232	1,760	20	286	2,922
Raccoon	—	—	285	—	10	407
Fur plates, mats	3	38	140	—	77	157
Other	30	1,327	2,590	49	2,453	3,688
Fur goods apparel	2,166	4,670	28,309	2,832	11,640	38,771
Total	16,407	26,339	101,577	17,648	39,028	128,255
IMPORTS						
Undressed						
China and Jap mink	81	—	98	124	—	156
Fox	2,052	4,938	10,929	1,631	4,713	9,255
Kolinsky	46	—	93	—	—	21
Mink	3,097	7,185	28,001	3,002	7,816	24,121
Muskrat	—	6,608	6,608	5	6,471	6,476
Persian lamb	36	4	239	—	—	48
Rabbit	—	29	29	—	13	29
Raccoon	—	22,672	22,710	—	23,014	23,041
Other	103	12,675	13,655	186	9,869	11,529
Dressed						
Hatters' furs	—	209	558	—	98	289
Mink	882	5,194	6,119	941	4,362	5,888
Seal	11	868	926	11	630	734
Sheep and lamb	916	2,530	4,588	1,565	1,866	4,411
Fur plates, mats	171	594	2,883	83	375	2,401
Other	389	5,150	6,729	176	2,796	4,170
Fur goods apparel	278	1,291	5,693	153	1,559	5,138
Total	8,062	69,947	109,858	7,877	63,582	97,707

Sources

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Agriculture in Canada

11.1

Trends and highlights

11.1.1

Agriculture is a major industry in Canada. Including the processing, wholesale and retail sectors, agriculture accounts for more than 25% of Canada's economic activity. Canada ranks seventh as an exporter of agricultural commodities following the United States, France, Netherlands, Brazil, Australia and the Federal Republic of Germany. In 1978 agricultural products accounted for 9.3% of Canada's export trade.

A meeting of importance to all Canadians, from the farmer to the urban consumer, was the national food strategy conference convened by the federal government in February 1978 and attended by delegates representing all segments of the food system. Subjects of discussion included trade policy, research, marketing, food aid, processing, distribution, retailing and consumer concerns. The conference was convened as part of the federal government's commitment to develop a national food strategy that will benefit every level of Canada's food system. An essential part of the strategy is a long-range plan for agricultural development. The plan has eight specific objectives, including those to increase production and marketing efficiency, to conserve and improve natural agricultural resources, and to protect farmers against income instability. The plan entails close co-ordination of federal and provincial activities in working to develop a comprehensive plan for the use of Canada's agricultural resources. Harmonization of federal and provincial agricultural stabilization programs has been given first priority in the development strategy.

Agriculture Canada was restructured to reflect the emphasis on the total food system concept and to broaden and strengthen marketing, market development, and food and nutrition services. The importance attached to federal-provincial relations was shown by the appointment by the department of a chief liaison officer in each province and by the establishment of an intergovernmental and international services branch.

Changes were implemented in the federal brucellosis-control program in 1978 and a stepped-up drive was launched to eradicate this disease from Canada's beef and dairy cattle. Within 12 months it produced dramatic results, with the number of quarantined herds dropping by 75%.

A new Canadian chicken marketing agency began operations in early 1979, the third national marketing body set up under the Farm Products Marketing Agencies Act — others were a Canadian egg marketing agency, established in 1972, and a Canadian turkey marketing agency in 1973. The new agency's first tasks were to set national production targets, and to develop a cost-of-production formula to guide the pricing practices of provincial chicken marketing boards.

As the result of federal budgetary cutbacks, the small farm development program and the related land transfer plan were terminated in early 1979. At the same time, operation of the Canfarm service agency, which provides computerized record-keeping services for farmers, was transferred from Agriculture Canada to Canfarm co-operative services, a group composed of the Canadian Federation of Agriculture and a number of co-operatives.

In the area of research, studies have shown that an unfamiliar Japanese elm could become a familiar shade tree in Canada. Unlike the American elm, the Japanese species is highly resistant to Dutch elm disease. Three years of testing by Agriculture Canada and Canadian forestry service scientists have shown that the species is almost immune to present strains of the disease and is quite hardy and adaptable to most Canadian conditions. One selection of the elm has been released, under the cultivar name Jacan. Commercial nurseries are expected to have some stock by 1981.

At Kentville, NS, Agriculture Canada researchers claimed a world record for raising the heaviest broiler chicken in the shortest time — reaching a weight of 2.88

kilograms at 49 days. The achievement has far-reaching implications for the broiler industry across Canada. A shorter time from hatching to market means better returns for the farmer and ultimately a lower cost to the consumer.

Stabilization payments were made during the year on 1976 prune plum, summer pear and sugar beet crops; for 1977 cow-calf production; and on 1977 crops of grain corn, white beans, sweet cherries, apricots in British Columbia, McIntosh apples in Quebec, and potatoes and winter wheat in Eastern Canada. Under the Agricultural Stabilization Act, certain commodities are supported at not less than 90% of the average market price for the previous five years, indexed to reflect changes in cash costs of production.

Twenty producer groups took advantage of the Advance Payments for Crops Act in 1978. Under the act, the federal government guarantees and pays interest on loans made to producer groups whose members require advance payments on their storable crops. Producer organizations participating represented growers of soybeans, apples, potatoes, onions, rutabagas, pears, grain corn, burley tobacco and wheat.

A total of 30 projects received financial support in 1978 from Agriculture Canada's new crop development fund. Its purpose is to encourage projects that help bring new crops, plant varieties and management techniques into practical use. The projects included studies to improve forage production in Alberta and blueberry production in Quebec's Eastern Townships region; a study of intensive production of winter wheat and grain corn in the Atlantic provinces; a study on the feasibility of establishing a fibre flax industry on the Prairies; and a project to develop improved varieties of rapeseed.

11.1.2 Agricultural regions

Climate, soil conditions and geography have combined to form several distinct farming regions in Canada. A harsh northern climate restricts most agriculture to the southern portion of the country and nearly all farms lie within 483 kilometres of the southern border. In the Atlantic provinces and Central Canada farming is limited to coastal regions and river valleys, and soils vary in depth and fertility. In the Prairie region soil is fertile but rain is light. Farming is limited to high plateaus and river valleys in the western mountainous region.

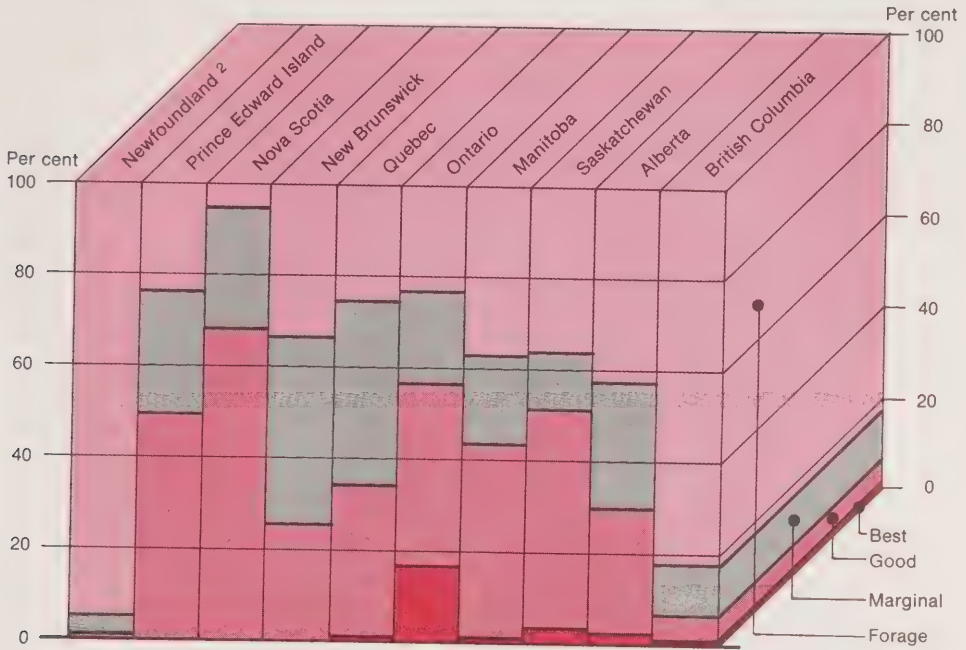
Farming is an important business in Canada. About 68.3 million hectares in 10 provinces are cultivated; 44.1 million hectares are improved land. In 1977, farm cash receipts exceeded \$10.1 billion and agricultural exports exceeded \$4.3 billion.

There are four main types of farms in Canada. Livestock farms include those specializing in feedlot finishing of cattle, large-scale feeding of hogs bought as weanlings, dairying, poultry production for meat and eggs, and breeding and raising livestock. Grain farms produce such crops as wheat, oats, flax and rapeseed. Special crop farms produce vegetables, fruits, potatoes or other root crops, tobacco or forest products. Other farms combine livestock and grain production. Although each region has its specialties, none is limited to one type of farming.

The Atlantic region. This area includes Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick and the Gaspé district of Quebec. It is hilly, with a general covering of relatively fertile soil developed under forest cover. The climate is modified by the sea, but also affected by cold currents from the coast of Labrador and winds from the north. Precipitation averages 760 to 1 400 mm (millimetres) annually. Mixed farming is general and forage crops support a healthy livestock industry. Some small farmers combine fishing or lumbering with farming.

Nova Scotia's main agricultural areas surround the Bay of Fundy and Northumberland Strait where they are protected from Atlantic gales. Dairying and poultry production are common and beef farming is increasing. The Annapolis Valley is famous for fruit, particularly apples. New Brunswick produces potatoes and livestock in the Saint John River Valley and there is mixed farming in the northwest. More than a third of the commercial farms in the province are dairy farms.

Farming is the principal occupation on Prince Edward Island. Potatoes are the leading crop but the fertile land also supports mixed grains, dairying and other livestock enterprises. Small fruits and vegetables are produced.

Food land capabilities by province¹

1. By Canada Land Inventory definition.

2. Includes only areas of Newfoundland within a 161 km radius of St. John's.

In Newfoundland agriculture is of only local importance because of rough terrain. Bogland offers some potential for reclaiming and vegetable farming.

The central region. This lowland area bordering the St. Lawrence River includes the Ottawa Valley and extends through Southern Ontario to Lake Huron. Fertile soils, mostly formed by glacial drift and lake sediment developed under deciduous forest cover, and a mild climate modified by the Great Lakes and the St. Lawrence River, account for varied farming. Precipitation averages 760 to 1 140 mm a year. It is the most densely populated part of the country, providing large markets for farm produce.

Well over half the commercial farms of Quebec are now dairy farms, a change from the traditional small mixed farming of old Quebec. Fairly large butter and cheese industries rely on these farms. Livestock farms, specializing in beef cattle, hogs or sheep, and mixed farms are common, and poultry and egg production is increasing. Forage crops account for the largest cultivation and oats and corn for feed are produced. Fruits, particularly apples, and vegetables are becoming prime crops. Sugar beets and flue-cured tobacco are also grown and processed.

Ontario has specialized crops in more southerly regions and the largest number of commercial livestock farms, and is second in dairy farms. Forage crops are the largest cultivated crops; others are corn, mixed grains, winter wheat, oats and barley.

Dairy farms are concentrated in Middlesex, Oxford and Perth counties in southwestern Ontario, in the Bruce Peninsula and in the eastern counties. Beef is a specialty in Lake Huron and Georgian Bay areas. Sheep, poultry and hog production is widespread. Ontario is a major producer of apples and the Niagara Peninsula accounts for most of Canada's tender tree fruits and grapes. Vegetables are grown near most large centres. Maple syrup is a major sideline for farmers in Ontario and Quebec.

The Prairie region. Manitoba, Saskatchewan and Alberta contain 75% of the farmland in Canada. Precipitation that averages only 330 to 510 mm a year and a climate of bitter winters and short hot summers favour the production of high quality hard red spring wheat, by far the largest single crop. Rangeland and pasture support a large number of cattle and livestock rearing in general is a major industry.

Manitoba has the highest rainfall of the three provinces and an average of 100 frost-free days, resulting in more varied farming. Wheat and other grains predominate but rapeseed is also grown, and there is mixed farming with an emphasis on livestock. Vegetables, sugar beets and sunflowers are grown south of Winnipeg and processed locally. Dairy farms are common around Winnipeg; hog production and sheep farms are widespread and beef cattle are raised in the southwest.

Saskatchewan grows about two-thirds of all Canada's wheat and large quantities of other grains, aided by light spring rainfall and long sunny days. Rapeseed is a popular crop and irrigation assists vegetable and forage crops. Mixed farming is common in the north where rainfall is higher, and turkey farming as well as egg and broiler chicken production are increasing. Hogs and beef cattle are gaining in importance.

Alberta is second to Saskatchewan in grain production but has more beef cattle than any other province. These are concentrated in large ranches in the south and in the Rocky Mountain foothills. Cattle-feeding operations are expanding and Alberta is a leading producer of hogs and sheep. Irrigation in the south aids in producing canning crops, sugar beets and forage crops. Dairy and poultry products are prominent in the mixed-farm economy. In the northwest the Peace River district produces grain and livestock.

The Pacific region. The most westerly region, British Columbia, is covered largely by mountains and forests. Only 2% of the area is agricultural. There is no single regional climate: the Pacific Coast has mild temperatures and high rainfall; the interior has moderate temperatures with parts as dry as the Prairies; and the central interior, although a little cooler, has fairly high precipitation. Farms tend to be small and highly productive and are concentrated in the south-central mainland and southern Vancouver Island.

Livestock and dairying account for the greatest part of BC's agricultural production. Hogs and beef cattle are raised on many farms, beef particularly in the central and southern interior areas. Dairying and poultry meat and egg production are concentrated in the lower Fraser Valley where the population is large. Mixed farming is scattered throughout BC.

British Columbia is Canada's largest producer of apples. The Okanagan Valley is also noted for tree fruits such as peaches, plums and cherries. Raspberries and strawberries are grown in the Fraser Valley and on Vancouver Island along with other horticultural crops — apricots, grapes, tomatoes, sweet corn and potatoes. The processing industry is well developed. Vancouver Island's mild climate also produces flowering bulbs.

The northern region. The agricultural region north of latitude 55° consists of parts of northern British Columbia, Yukon, and the Mackenzie River Valley in the Northwest Territories. Agricultural settlement is not encouraged by the harsh climate and small population. Precipitation varies from light in the northern Yukon to heavy on the mountainous coast of BC. Frosts can occur in any month, but crops grown on northern slopes escape some damage. The North is estimated to have 1.2 million hectares of potentially arable land and large expanses of grazing land, but there are probably fewer than 30 commercial farms in the region. Dairy products, beef cattle, forage crops, feed grains and vegetables are produced for the small local market.

11.1.3 Farm ownership and labour

Most farms in Canada are owned by the farmers who operate them, but as individual farms increase in size more land is being rented. Payment is usually cash or a share of crops or receipts.

Farm families provide most of the labour required, but experienced workers are often employed on dairy farms and seasonal workers are needed for harvests. In the

West, combine operators often move their machinery with the harvest, starting in the US and moving into Canada later in the season. Potato harvesters follow the same pattern in the East.

Transportation

11.1.4

Railways have been the traditional method of transporting agricultural products to large markets and ports. The Prairie provinces in particular rely on trains to move wheat and livestock to Canadian markets and to elevators in Vancouver, Churchill and Thunder Bay for shipment abroad. Bulky products such as sugar beets are usually shipped by rail.

Many products are now shipped by road. Although railways have retained their importance on the Prairies, many branch lines have been abandoned in other areas and most farmers now ship their produce at least part way in their own trucks. Eggs, poultry, cream, fruits and vegetables go to local markets by road, and milk is generally collected at farms by tank trucks. Commercial farms and co-operatives use trucks for marketing and distributing agricultural products and in delivering supplies to farms.

Water routes supplement these means. The Great Lakes have long been used to ship grain from Thunder Bay to Eastern Canada and since the opening of the St. Lawrence Seaway in 1959 the lakes have been open to ocean-going vessels. Churchill is another seasonal port for Prairie grains. Vancouver and Halifax are year-round ports.

Marketing and supplies

11.1.5

Marketing of Canada's farm products is a blend of private trading, public sales and auctions, and sales under contract and through co-operatives or marketing boards. Methods vary with type of product, region and preference of producers.

Canada's principal livestock markets are at Montreal, Toronto, Winnipeg, Calgary and Edmonton, but other outlets vary from large stockyards to country collection points. Most cattle and calves are marketed by auction at public stockyards; the rest go directly to packing plants or are exported. Most hogs, sheep and lambs are sold directly to packing houses; sales of hogs are usually handled by marketing boards.

Marketing eggs is regulated by the Canadian egg marketing agency; a turkey marketing agency serves turkey producers. In early 1979, the new Canadian chicken marketing agency began setting national production targets.

Marketing fluid milk is a provincial responsibility. Quality, prices and deliveries are regulated by provincial marketing agencies which estimate market requirements. A marketing plan allocates producers a share of the Canadian market for milk used for manufacturing. It is in effect in all provinces except Newfoundland. Market shares are administered by provincial marketing agencies under the direction of the Canadian Dairy Commission.

Most grain marketed in Canada is grown in the Prairie provinces. The Canadian Wheat Board is responsible for various aspects of marketing wheat, oats, barley, rye, flax and rapeseed in Western Canada. In Ontario all wheat grown is sold through the Ontario Wheat Producers' Marketing Board.

Fruit and vegetables are distributed through fresh and frozen food markets, canneries and other processors. Most produce is grown under a contract or a pre-arranged marketing scheme; marketing boards, producers' associations and co-operatives are common. Tobacco is controlled by marketing boards in Ontario and Quebec, soybeans by a board in Ontario and sugar beets by contracts with refineries in Quebec, Manitoba and Alberta.

Farmers' co-operatives are usually organized to handle or market producers' crops or livestock, to supply goods and services needed in farming, or both. Co-operative pooling arrangements for farm products guarantee farmers cash advances on deliveries whether products are sold immediately or not.

Marketing of seed in Canada is carried on by private seed companies, farmer-owned co-operatives and seed growers. Seed grades are established by federal regulation. Pedigree seed is produced by members of the Canadian Seed Growers' Association under conditions that ensure purity of the variety.

Farm machinery, building materials, fertilizers, agricultural chemicals and other supplies are obtained through commercial and co-operative outlets. Statistics on farm

implement and equipment sales appear in Chapter 19, Merchandising and trade, and on manufacturing of agricultural implements in Chapter 18, Manufacturing.

11.2 Federal government services

11.2.1 Agriculture Canada

Responsibilities of the department cover three broad areas: research, promotional and regulatory services and assistance programs. Research aims at solving practical farm problems by applying fundamental scientific research to soil management, agricultural engineering, and crop and animal production. Promotional and regulatory services apply to such areas as marketing and market development, crop and livestock improvement, inspection and grading of agricultural products, control of insect pests and diseases of plants and livestock, and registration of pesticides and fertilizers. Assistance programs include those which provide for price stabilization, compensation, and income security in the event of a crop failure. The department's many services are provided under the authority of 38 acts of Parliament.

11.2.2 Government and the grains industry

Government's interest and involvement in the grains industry predates Confederation and is a record of policies relating to land use and settlement; transportation; grain elevators, storage, handling and forwarding; marketing methods and opportunities; income security; and the many ramifications of international competition and the search for international co-operation in the sale of grain. The federal government's role in the grains industry is carried out by the agriculture department, the industry, trade and commerce department and two semi-autonomous bodies which report to Parliament through federal ministers: the Canadian Grain Commission and the Canadian Wheat Board.

Three other agencies also play integral roles: the Canadian International Grains Institute, the Canada Grains Council and the Grains Group. The grains institute contributes to the maintenance and expansion of markets for Canadian grains and oilseeds and their products in Canada and abroad. The grains council provides a forum for co-ordination, consultation and consensus on industry recommendations to government.

Grains Group. In 1970 the minister responsible for the Canadian Wheat Board organized a special advisory group representing the departments of agriculture, industry, trade and commerce, and transport. The group examines problems of the grains industry in production, transportation and handling, and marketing. It co-ordinates, reviews and recommends federal policies for these areas. Policies adopted are implemented through government departments or other agencies concerned with the grains industry.

Production. Agriculture Canada conducts research in plant breeding and production methods to improve varieties, yields and quality of grains for which there is a domestic and export demand. An innovation has been the provision each March, well in advance of spring planting, of information on initial prices to be guaranteed farmers for new crops of wheat, oats and barley, and on minimum deliveries to be accepted by the wheat board during the crop year. These are announced by the minister responsible for the wheat board.

Marketing. To broaden assistance for sales and market development of grains, oilseeds and products, pertinent services of the industry, trade and commerce department are consolidated in the grain marketing office. Regular contact is maintained with the wheat board, other agencies and organizations concerned with grain marketing, trade commissioners abroad and the private trade sector. A program of trade promotion includes participation in missions and trade fairs abroad. The department also provides cost- or risk-sharing to projects, designed to increase sales of grains and other products, which would not be realized without incentives.

The processing industry, federal and provincial governments and universities co-operated in setting up the \$5 million POS Pilot Plant Corporation (protein, oil and starch) in Saskatoon, a non-profit corporation directed by subscribing members.

Credit. Canada has been selling grain on credit since 1952. The original program provided for grain sales on terms up to three years at commercial rates of interest. In 1968 the government approved a broadened and improved program to improve Canada's competitive position in export markets. It allowed exporters to respond quickly to export opportunities in developing countries and on more favourable credit terms in some circumstances.

All credit sales are now on terms of three years or less. Sales of western wheat, barley and oats, which are marketed by the Canadian Wheat Board, are financed under the Canadian Wheat Board Act with a government guarantee of repayment. Credit sales of other grains are insured under the Export Development Act.

Food aid. The Canadian food aid program has expanded from \$2 million in 1962-63 to \$203 million in 1978-79. Since 1963 food aid under bilateral and multilateral aid programs has been administered by the Canadian International Development Agency. Most of the food consists of wheat and wheat products, but rapeseed and rapeseed oil are also included. In recent years about 60% of Canada's food aid was extended to foreign governments under bilateral programs, with the remaining 40% going through multilateral channels, mainly the world food program. Over the last 10 years about 85 countries have received food aid from Canada. Regular contributions of flour are also made to the United Nations Relief and Works Agency. Canada's minimum annual wheat and flour aid commitment under the food aid convention of the International Wheat Council is 495 000 tonnes. This commitment has always been exceeded, usually by a wide margin.

The Canadian Grain Commission

11.2.3

A Canadian grain commission was established by the Canada Grain Act in April 1971, replacing the board of grain commissioners for Canada, established in 1912. It reports to the minister of agriculture, and has headquarters at Winnipeg and offices across Canada, the largest in Vancouver, Thunder Bay and Montreal.

The commission administers the Canada Grain Act, including inspection, weighing and storage of grain; fixes maximum tariffs for charges by licensed elevators; establishes grain grading standards; and operates the Canadian government elevators at Moose Jaw, Saskatoon, Calgary, Edmonton, Lethbridge and Prince Rupert. In the latter part of 1978 steps were taken toward turning the elevators over to the private sector. All elevator operators in Western Canada and in Eastern Canada handling western-grown grain for export, as well as grain dealers in Western Canada, must be licensed by the commission. On a fee basis, the commission provides official inspection, grading and weighing of grain, as well as registration of terminal elevator and eastern elevator receipts. The economics and statistics division of the commission is the basic source of information on grain handled through the Canadian licensed elevator system. The commission is also responsible for administering the Grain Futures Act which provides for supervision of grain futures trading.

The commission's grain research laboratory conducts surveys of the quality of each year's grain crops and of grain moving through the Canadian elevator system. It provides information on quality of varieties and grades of grain to the inspection division, collaborates with plant breeders in studies on new grain varieties and undertakes basic research in relation to quality characteristics of cereal grains and oilseeds.

The commission's assistant commissioners — one in Alberta, two in Saskatchewan, one in Manitoba and one in Ontario — investigate complaints of producers and inspect licensed elevators. Grain elevators, equipment and stocks of grain may be inspected at any time.

The commission sets up western and eastern grain standards committees which participate in establishing grain grades and grade specifications and recommend standard and export standard samples for various grades. It also appoints grain appeal tribunals to

hear appeals against grading of grain by the commission's inspectors; decisions of these tribunals are final.

11.2.4 The Canadian Wheat Board

This board was set up under the Canadian Wheat Board Act of 1935. The wheat board became the sole marketing agency for Prairie wheat, oats and barley sold interprovincially or internationally. With the introduction of a new domestic feed grains policy in August 1974, marketing of feed grains for domestic use was removed from exclusive wheat board jurisdiction and these grains are now traded on the open market. The wheat board remains the sole purchaser and seller of feed grains for export. Other crops, such as rye, rapeseed, flaxseed, buckwheat and mustard are marketed by the private grain trade.

Sale of Prairie-grown wheat, oats and barley is carried out through sales negotiated by the wheat board, or through grain exporting companies acting as its agents.

Delivery of the kinds, grades and quantities of grain needed by customers is essential to the board's marketing program. This is accomplished in two stages. First, grain is delivered by the producer from his farm to the local country elevator under a quota system required to meet market commitments, which allocates delivery opportunities equitably among all grain producers. Second, the grain is moved from country elevators to large terminals in Eastern Canada, at Thunder Bay, Churchill, and the West Coast by the railways. Grain is shipped from Thunder Bay to eastern positions largely by lake vessels. Extensive planning and a high degree of co-ordination within the grain handling and transportation industry are required. The wheat board, which co-ordinates the entire movement, programs rail shipments from country elevators to terminals on a weekly basis according to sales requirements.

The producer receives payment in two stages. An initial price is established by order-in-council before the start of a crop year; this price, less handling costs at the local elevator and transportation costs to Thunder Bay or Vancouver, is in effect a guaranteed floor price. If the wheat board, in selling the grain, does not realize this price and the necessary marketing costs, the deficit is borne by the federal treasury; after the end of the crop year when the board has disposed of all the grain in accordance with the Canadian Wheat Board Act, it makes a final payment to producers.

Since implementation of the new domestic feed grains policy, a producer delivering feed grains to a country elevator has the option of selling the grain to the wheat board or on the open market. In the latter case he will, on delivery, receive a payment representing the final price in contrast to the wheat board system of initial and final payments. As a result of a modification effective in August 1976 the wheat board offers feed grains to the domestic market at a price competitive with US corn.

The Prairie Grain Advance Payments Act, administered by the wheat board, provides that producers may receive through their elevator agents interest-free cash advances on farm-stored grain. The purpose is to make cash available to producers pending delivery of their grain under the quotas established. An advance of up to \$45,000 (depending on the number of producers involved in the operation) may be issued to multi-farm operations, such as partnerships, co-operative and corporate farms. The maximum total advance prescribed by regulation may not exceed \$15,000 for any individual for the crop year. The act also contains provisions for special advance payments to maximums of \$7,500 for unharvested grain and \$1,500 for drying of grain.

Two-Price Wheat Act. The federal government has paid more than \$375 million under the Two-Price Wheat Act. The subsidy which protected consumers from high world wheat prices was paid on wheat sold for domestic consumption during the period September 1973 to November 1978. In conjunction with the subsidy, the price to millers for wheat was fixed at \$119.42 per tonne.

The subsidy was eliminated on wheat sold after November 1978, and a new pricing system was introduced. Under the current domestic pricing system, wheat is sold to Canadian millers at world prices within the range of \$146.98 to \$183.72 a tonne. Canadian consumers are protected when world prices rise above the upper limit while producers are protected against low world prices by the minimum domestic price.

The Canadian International Grains Institute was incorporated in July 1972. It operates in affiliation with the wheat board and the grain commission. Financial responsibility is shared by the federal government and the wheat board. The institute is designed to help maintain and enlarge markets at home and abroad for Canadian grains, oilseeds and their products. It offers instructional programs to participants from countries purchasing these commodities and to Canadians associated with the grain industry. Courses are offered in grain handling, transportation, marketing, flour milling, bread baking and macaroni manufacturing, and lectures and practical training are given in analytical methods used in processing and using grains and oilseeds. Located in the Canadian Grain Commission Building in Winnipeg, the institute includes classrooms, conference rooms, offices, library, laboratories, an 8.16 tonne, 24-hour-capacity flour mill and a pilot bakery.

The Canada Grains Council was established in 1969 to improve co-ordination within the industry on recommendations to government. Its principal aim is to co-ordinate activities directed at increasing Canada's share of world markets for grains and grain products and effecting their efficient use in Canada. Membership is open to all non-governmental organizations and associations whose members are engaged in grain production, processing, handling, transportation or marketing.

Administrative costs of the council are shared by federal government and industry members. The council currently has 29 member organizations representing thousands of individuals. At least two general meetings are held each year; the board of directors meets about 10 times a year. The council is served by a small secretariat.

Of more than 300,000 farms in Canada, about 20% are classified as wheat farms. Wheat is the most valuable grain crop produced, but cattle and calves are the highest category among commodities sold, accounting for \$2.9 billion of the total \$11.8 billion for farm cash receipts in 1978.

The Western Grain Stabilization Act became effective in April 1976. Its objective is to protect producers against a large unexpected decline in either world grain prices or in sales of Canadian grain, increases in the cash costs of producing that grain or in any combination of those factors. The support given prevents the net cash flow, the difference between total receipts from the production and sale of cereals and oilseeds and the cash costs of production, in each calendar year, from falling below the average of net cash flow in the previous five calendar years. Payments totalling \$115 million were issued from the fund in 1977.

Under this voluntary program, participating grain producers contribute a levy of 2% of their grain sales up to a maximum of \$25,000 a year to the western grain stabilization fund. The federal government contributes an equal amount to double the participating farmers' contributions. Detailed literature on the program is available from the Western Grain Stabilization Administration in Winnipeg.

Federal farm assistance programs

11.2.5

The basic objective of federal farm assistance programs is to help ensure stability of the country's agriculture industry and stability in the supply of food for Canadians. Price-support programs help producers to secure a fair return for their labour and management, provide stability of income, and enable producers to remain in business during times of depressed prices. Crop insurance, available through provincially operated programs to which the federal government contributes financially, enables farmers to protect themselves against crop losses caused by natural forces such as hail, drought and insects. Availability of credit is important for farmers to improve or expand their operations. Among other assistance programs are those for marketing and feed grain. The assistance programs, and the special measures that may be established to

meet emergency conditions, are administered by Agriculture Canada or by the agencies responsible to the agriculture minister, except for programs carried out under the Prairie Grain Advance Payments Act, administered by the wheat board, and the Agriculture and Rural Development Act (ARDA) and the Prairie Farm Rehabilitation Act, both administered by the regional economic expansion department.

The Farm Improvement Loans Act administered by Agriculture Canada came into force in March 1945 for an initial period of three years and was subsequently amended to remain in effect for additional lending periods. Under this legislation the government may guarantee loans by chartered banks and other designated lenders to farmers for a wide range of purposes. The maximum which a borrower may have outstanding is \$75,000. Loans may be repayable over a period up to 10 years for all purposes, except land purchase for which a 15-year term is permitted.

Farm improvement loans must be secured and borrowers are required to provide a certain portion of the cost of a purchase or a project from their own resources. The maximum rate of interest on loans is based on the prime lending rate of the chartered banks, plus 1%.

From inception of the program to December 31, 1978, there were 1,806,537 farm improvement loans made amounting to over \$3,888 million. During the same period, payments were made to lenders under the guarantee provision in respect of 6,055 claims amounting to \$7.6 million and recoveries amounted to \$1.8 million.

The Agricultural Products Board was established in 1951 to administer contracts with other countries for purchase or sale of agricultural products and to perform other commodity operations as Canadian needs may dictate. The board's activities have included purchasing surplus Canadian commodities with resulting improvement in producer prices. Some of these commodities have been processed, packaged and delivered to the world food program as part of Canada's commitment to the Food and Agriculture Organization of the United Nations.

The Agricultural Stabilization Board, established in 1958 by the Agricultural Stabilization Act and amended in July 1975, is empowered to stabilize prices of agricultural products to help the industry get fair returns for labour and investment, and to maintain a fair relationship between prices received by farmers and their costs of goods and services.

The act provides that the board shall take action to stabilize prices of agricultural commodities at prescribed levels. Included are slaughter cattle, hogs, sheep, industrial milk, industrial cream, corn, soybeans, and oats and barley produced outside designated areas defined in the Canadian Wheat Board Act. The prescribed price of a named commodity is calculated at 90% of the five-year average of market price, or at such higher percentage as the Governor-in-Council may determine, indexed to reflect cash cost of production in that year as compared to the preceding five years. The Governor-in-Council may similarly designate other commodities for support. The board may stabilize the price of any product by offer to purchase, or by making deficiency payments or other authorized payments for the benefit of producers. Stabilizing prices by means of assistance payments has helped balance production and demand.

Since the inception of the act the cost of stabilization programs has totalled over \$2 billion. The board maintains a revolving fund of \$250 million; losses are made up by parliamentary appropriations. An advisory committee, named by the agriculture minister and composed of farmers or representatives of farm organizations, advises the board and the minister on matters relating to stabilization.

The Crop Insurance Act passed in 1959 (RSC 1970, c.C-36), permits the federal government to help the provinces in making all-risk crop insurance available to farmers on a shared-cost basis under federal-provincial agreements. Crop insurance can protect the farmer against unforeseen losses by spreading their impact over a number of years. The initiative for establishing crop insurance rests with the provinces and programs are developed to meet provincial requirements.

The federal government contributes a portion of premium costs or administration costs and shares the risk by providing loans or reinsurance when indemnities greatly

exceed premiums and reserves. Farmers pay 50% of total premiums required to make the programs self-sustaining. The remainder is contributed by the federal government where the province elects to pay all administrative costs, or share administrative costs and the remaining premium equally with the federal government.

In the 1978-79 crop year, 110,000 farmers purchased some \$1.5 billion in crop insurance. Premiums totalled \$148 million (including government contributions).

Indemnities amounted to \$75 million on the 1978 crop, a considerable drop from \$111 million in 1977. Summer drought, hail and wet weather at harvest time caused heavy losses in all provinces.

The Canadian Livestock Feed Board, established by the Livestock Feed Assistance Act (1966), is a Crown agency reporting to Parliament through the agriculture minister. It has four main objectives: to ensure that feed grain is available to meet the needs of livestock feeders; that adequate storage space in Eastern Canada is available for feed grain to meet the needs of livestock feeders; that the price of feed grain in Eastern Canada and in British Columbia remains reasonably stable; and that there is fair equalization of feed grain prices in Eastern Canada and in BC.

The board may make payments related to the cost of feed grain storage and transportation, the latter payments having been made since 1941. Since April 1967 the freight subsidy has been administered by the livestock feed board. Initially, it was applied only to feed grains produced in the Prairie provinces and designated for domestic livestock consumption in Eastern Canada and British Columbia. It was then extended to the movement of Ontario corn and wheat to the Atlantic provinces and Quebec.

The feed freight assistance program underwent substantial changes as part of the domestic feed grain policy. These changes, which became effective in August 1976, included reductions of \$6.61 a tonne in rates of assistance to Ontario and Western Quebec (as far east as Montreal). For Eastern Quebec and the Atlantic provinces, rates of assistance remained unchanged. Expenditures under the program were reduced from recent levels of about \$20 million a year to about \$10 million. Effective 1977, for a period of up to five years, the board may make payments against carrying charges for feed grains stored at feed mills in Eastern Canada and BC. Financial incentives are also available for the construction and expansion of inland elevators. The purpose of these federal programs is to encourage expansion of grain storage in grain deficient areas.

The Farm Credit Corporation. This corporation (FCC) is responsible for the administration of the Farm Credit Act and the Farm Syndicates Credit Act. Responsibility for lending decisions and operations is decentralized into seven regional offices, one for the Atlantic region and one for each of the other provinces. Field officers work out of 108 offices across Canada.

The Farm Credit Act, designed to meet long-term mortgage credit needs of Canadian farmers, provides two types of mortgage loans. Borrowers must be of legal age to enter into a mortgage agreement and loans are made only to Canadian citizens or those with landed immigrant status. All loans are repayable on an amortized basis within a period not exceeding 30 years. Funds for lending under the act are borrowed from the finance minister. In the fiscal year ending March 31, 1978 there were 7,066 loans for a total of \$558.2 million.

The Farm Syndicates Credit Act authorizes the corporation to make loans to syndicates of three or more farmers for machinery, equipment or buildings. Loans can be made to syndicates to a maximum of \$100,000 or \$15,000 per qualifying member, whichever is the lesser. Loans are repayable over a period not exceeding 15 years for building and permanently installed equipment and seven years for mobile machinery. In 1977-78, the corporation lent \$2.1 million to syndicates, representing 105 loans.

Provincial government services

11.3

Departments of agriculture

11.3.1

Newfoundland. Government agricultural services in Newfoundland are provided by the forestry and agriculture department. Principal branches are: agriculture, lands and

forestry. Programs are carried to the public by a regional services branch. Three regional supervisors, with agricultural representatives, each serve the public in a specified area.

Departmental policies in support of the agriculture industry include: a land clearing grant for private farmers, a capital assistance grant for construction of buildings and purchase of equipment, subsidized provision of agricultural limestone, bonus payments for retention of quality breeding stock, provision of farm related training projects, a subsidized regional pasture program, subsidized crop and livestock insurance programs, a subsidized veterinary services program, and technical information and farm management services.

Departmental assistance is also given under a provincial farm development loan board, a Newfoundland marketing board and a Newfoundland farm products corporation. The department produces and sells to farmers swine and sheep breeding stock which is free of specific diseases, resulting from a controlled breeding program. It sells elite seed potatoes from its seed potato farm to registered seed potato producers.

A policy of identifying and preserving lands for agricultural use, under provincial legislation, has been adopted by the department. The designated areas have the best potential for supporting a viable agricultural industry. All Crown land, intended for agriculture, is leased rather than granted to ensure its intended agricultural use. Provision has been made with farm lending institutions to accept leased land as security for loans.

Prince Edward Island. The agriculture and forestry department is composed of a field services branch with farm management, district offices, farm development, livestock, and crops and engineering sections; a forestry branch, with a forest nursery and Bunbury nursery divisions; a technical services branch; and a veterinary and dairy branch. The office of management services provides support to the four branches through administration and information sections. An office of policy planning and evaluation collects and analyzes economic data and co-ordinates program planning.

Work of the department is aimed at serving the needs of farm families, especially in efforts to stabilize and increase farm incomes and improve farm management. Programs range from 4-H soil-testing and developing individual plans for the family farm development program to crop insurance promotion, working with commodity groups and providing modern production recommendations.

Nova Scotia. The agriculture and marketing department directs the government's agricultural program. The department is concerned primarily with administration, extension, economics, horticulture and biology, livestock services, market development, soils and crops, formal agricultural education through the Nova Scotia Agricultural College in Truro and farm expansion and development loans through the Nova Scotia Farm Loan Board. The department is particularly interested in encouraging rural people to help themselves through such organizations as the Nova Scotia Federation of Agriculture and commodity-oriented groups.

New Brunswick. Provincial government agricultural policy and programs are directed by the agriculture and rural development department. Branches are concerned with administration, extension, livestock and poultry, veterinary services, communications and marketing, plant industry, agricultural engineering, home economics, credit unions and co-operatives, and planning and development. The province also has a farm adjustment board, farm products marketing commission, dairy products commission, and forest products commission.

Quebec. The Quebec agriculture department contributes to the development of the agricultural sector by offering farmers professional, technical and administrative services to modernize their farms, improve their production and raise their standard of living. The department is divided into four branches — production, marketing, research and education, and administration.

The production branch, through its 12 regional offices and five regional laboratories, is responsible for agricultural programs and policies and provides information on development of agricultural resources. The farm succession service is in charge of a program to ensure that there will be a new generation of young farmers.

The livestock production service provides artificial insemination centres at St-Lambert and St-Hyacinthe, a Quebec swine herd analysis program and a Quebec dairy herd analysis program. The veterinary service is responsible for a contributory animal health program and a preventive veterinary medicine program. It administers a provincial veterinary laboratory at Quebec and a provincial animal pathology laboratory at St-Hyacinthe. Special animal health and assistance programs are also available to farmers. An engineering branch deals with mechanized operations, farm buildings and farm machinery, and agricultural water services.

Crop productions services include: a potato breeding centre at Manicouagan; a pilot blueberry processing plant at Normandin; a St-Bruno blueberry freezing plant; a St-Norbert maple products centre; beekeeping centres at Deschambault and St-Hyacinthe; specialized laboratories for soil analysis at La Pocatière; and a plant laboratory at St-Hyacinthe.

Both the farmer and the consumer are served by the marketing branch which is responsible for marketing, economic studies and technical assistance to food processors. The food inspection branch deals with plant, dairy and meat products, providing quality control, standardization and fraud suppression services.

A research and education branch is in charge of scientific research and experimental development and of education and training in agricultural technology at St-Hyacinthe and La Pocatière.

An administration branch controls the financial and administrative operations of the department, such as payment of subsidies, supply of goods and services, and handling of documents. The organization of a farm labour policy to solve problems of recruiting, training, employment and mobility of farm workers is the responsibility of the farm labour service.

An information service provides a link between the department and farmers. It advises farmers of developments in Quebec's agricultural policies and programs and administrative and technical methods developed to increase yields, lower the cost of production and facilitate marketing.

Ontario. The agriculture and food ministry is responsible for increasing and improving export and domestic markets for Ontario agriculture and food products. Services include domestic and export market development programs, promotion programs, and information related to situation and prospects.

Under a federal-provincial rural development agreement, the province shares equally with the federal government the cost of certain rural development programs. They cover farm enlargement and adjustment, rural resource development and assistance to rural industries to increase employment for rural people.

Agricultural manpower services of the rural development branch assists Ontario farmers with their manpower needs by providing information and recommendations on the farm labour supply, employment standards legislation, personnel management, job creation programs and training programs for farm workers. Help is also given to foreign exchange students coming to Ontario farms and to Ontario youth going to farms in other countries.

A soils and crops branch conducts extension programs in soil management and crop production. Its four sections cover field crops, horticultural crops, seeds and weeds, and pest control. The branch also administers the Weed Control Act and the Grain Elevator Storage Act.

In the veterinary services branch, a laboratory section with six laboratories provides diagnostic, investigational, consultation and extension services and administers the Fur Farms Act. A meat inspection section administers the Meat Inspection Act. A regulatory and communicable diseases section administers acts, policies and programs concerned with disease control, animal care and sale of livestock medicines.

A livestock branch supervises livestock improvement programs and administers provincial laws relating to livestock. Programs include dairy herd improvement; beef cattle, sheep and swine performance testing; ram premium policy; federal-provincial sheep transportation assistance; testing of feed samples, a computerized ration formulation program; warble fly control and Northern Ontario livestock assistance. The

branch makes grants to regional livestock clubs that hold sales and livestock shows, and sponsors exhibits of livestock outside the province. A staff of specialists provides feeding and management advice to livestock producers.

An Ontario stockyards board, operating under the federal Livestock and Livestock Products Act, provides a marketing service for Ontario livestock producers and protects their bargaining power.

A crop insurance commission, a branch of the ministry, offers contributory insurance against weather, insect and disease damage to grain and forage crops, a wide variety of vegetables and fruits, tobacco, seed corn and flax. The administration is paid by the Ontario government and 50% of the premium is paid by the federal government.

The province has a milk commission which co-operates with the Ontario milk marketing board, cream producers' marketing board and dairy council in dairy policy planning and development. It delegates the necessary powers to the milk and cream boards to execute their responsibilities. The commission is responsible for regulations under The Milk Act, and conducts elections of members to the Ontario milk marketing board.

A milk industry section of the farm products quality branch is responsible for carrying out the regulatory functions identified under legislation. This section administers the farm milk quality, plant inspection, plant audit and central milk testing programs.

A fruit and vegetable section inspects fruit and vegetables for grade, and promotes improved methods of disease control, grading, packaging, marketing, handling, storage and transportation.

A market development branch is responsible for finding methods to improve domestic and export market opportunities. An Ontario food terminal, operating under the Ontario Food Terminal Act, offers farmers services of one of the largest volume wholesale fruit and vegetable markets in Canada.

Research and education are administered by the education and research and special services division. An advisory agricultural research institute reviews research programs and recommends priorities.

The extension branch, through agricultural representatives at 54 county and district offices, relays information on research development and advice on farm management. Agricultural engineers work throughout the province. Northern Ontario assistance policies are also administered by the branch, which assists 4-H clubs and a junior farmers' association of Ontario.

The home economics branch conducts extension programs for rural adult groups and for young people's 4-H homemaking clubs on foods, nutrition, clothing, textiles, home furnishings, home crafts, and family and community life.

The information branch distributes publications, news releases, radio tapes and television news clips. A film library distributes more than 2,000 films annually. The market information service provides commodity quotations to the media and producers daily using radio and audio-tape.

An agricultural and horticultural societies branch offers advice and financial aid to agricultural and horticultural societies and plowmen's associations and manages an international plowing match and farm machinery show. An economics branch researches marketing, policy, production, land use and dairying, and works with Statistics Canada to collect and publish statistics on farm production and marketing.

A food land development branch provides an agricultural perspective to land-use planning. Staff contribute to and comment on official plans, amendments to plans and subdivision applications, and project plans for hydro, highways, pipelines and other facilities. Interim management of government-owned agricultural lands is accomplished through a land-lease program. The branch administers the Drainage Act and the Tile Drainage Act to provide loans and grants for draining agricultural lands. Staff also provide policy recommendations on alternative land-use programs.

Manitoba. The agriculture department serves through four divisions: agricultural production; agricultural marketing development; agricultural land and water; and management.

An animal industry branch encourages improvement and efficient production of livestock, and helps to improve the quality of dairy products through inspection, consultation, education and laboratory quality control.

A soils and crops branch encourages production and improvement of cereal, forage and special crops and horticulture, and promotes policies that encourage good field crop husbandry and weed control. An economics branch deals with educational and development programs in farm management and agricultural economics and carries out special studies. A marketing branch conducts market development research and analysis to establish long-term markets for farm products. A veterinary services branch operates a diagnostic laboratory for animal diseases, administers legislation, and co-operates with practising veterinarians.

A technical services branch provides programs in agricultural engineering, entomology and beekeeping. A community and family programs branch carries out education and development programs in 4-H and youth, agricultural manpower, community affairs and resource analysis. A communications branch provides services to mass media outlets and produces and distributes a wide range of instructional materials. The regional section includes five regions with 38 district offices, each staffed with agricultural representatives. The major role of this section is extension of educational programs and advice in agriculture and rural development.

A Manitoba marketing board supervises the operation of producer marketing boards responsible for the orderly marketing of hogs, milk, vegetables, eggs, broiler chickens, root crops, turkeys and honey.

An agricultural land and water division consolidates departmental efforts to develop water resources, sewer and water infrastructure for farms and rural communities and ensures better land utilization.

Saskatchewan. Saskatchewan Agriculture has four main divisions: production and marketing, farm resources development, extension and rural development, and planning and special projects. The latter is responsible for policy and program development.

The production and marketing division administers legislation to improve production, handling, processing and marketing of farm products. It includes the following branches: plant industry, animal industry, veterinary services, and marketing and economics; and a milk control board, a crop insurance corporation, a hog marketing commission and sheep and wool marketing commission.

The extension and rural development division co-ordinates activities to help farm families maintain viable farm units. Its regional extension services branch has field staff throughout the province. The family farm improvement branch provides technical advice and services relating to farmstead mechanization. The irrigation branch, with headquarters at Outlook, is assisting development of a South Saskatchewan River irrigation project.

The extension and rural development division also co-ordinates activities of FarmStart Corporation which administers a credit and grant program for persons establishing or expanding livestock operations.

The farm resources development division is responsible for the development of land and water resources for agricultural uses, for construction for the South Saskatchewan River irrigation project and for development in community pastures. The conservation and land improvement branch provides engineering services in water management, including flood control, drainage and irrigation and is responsible for implementing Qu'Appelle conveyance and flood protection projects. The lands branch administers over 2.8 million hectares of provincial lands for agricultural use. More than 12,000 farmers and ranchers lease land as full units or as additions to their private holdings. The remaining 607 028 hectares are in provincial and co-operative pastures providing grazing for over 1 50,000 head of cattle belonging to more than 5,500 farmers.

Saskatchewan's land bank commission, agricultural implements board, and farm ownership board, are included in the farm resources development division. The land bank commission provides an alternative for farmers not wishing to commit themselves immediately to a heavy investment in land. It also provides Saskatchewan land-owners

with a continuing sales opportunity for land, enables new farmers to start farming independent of substantial family assistance and permits farmers with insufficient land to add to their holding without raising large sums of money for capital investment. Major activities of the agricultural implements board include registration of implement distributors, licensing and inspection of retail vendors, and investigating complaints regarding warranties and repair parts availability. The farm ownership board deals mainly with farmland ownership by non-residents and non-agricultural corporations.

Alberta. The agriculture department activities are co-ordinated by an executive committee. A secretariat, in consultation with agribusiness, farm organizations and researchers, advises the department on planning and research.

The office of the Farmers' Advocate ensures protection of the rights of individual farmers. The office investigates problems and complaints of farmers not relating to the provincial government and its agencies.

Marketing activities are carried out by a marketing and economic services group and an international marketing group, to expand domestic and foreign markets for Alberta's farm products and to encourage increased food processing in Alberta.

An economic services division provides economic, statistical, business and market analysis to facilitate decision making and to encourage efficient use of resources.

A marketing services division supports commodity groups concerned with marketing, conducts consumer education and food promotional programs and assists new processing facilities and development of new food products.

The international marketing group assists Alberta exporters of agricultural commodities, processed food and feed products and technical services. It is the provincial government link between Alberta's agricultural industry and world markets. Market development programs are designed to supplement those of the federal government.

Development divisions advise producers, encourage survival of family farms and promote the interests of rural communities. An extension division with 64 district offices is co-ordinated by six regional directors, with regional specialists in livestock, plant industry, engineering and home economics. Engineering and rural services

A vital part of Canada's food strategy is a long-range plan for agricultural development. Provincial and federal departments and agencies are working together to develop a comprehensive plan for the use of Canada's agricultural resources.

branches deal with engineering, home design and agricultural services. Programs in a home economics and 4-H division include home management, nutrition, family living, and 4-H youth training and leadership development. An irrigation division services the development and upgrading of irrigation projects. An Alberta agricultural development corporation guarantees or makes loans for agricultural enterprises.

A plant industry division provides assistance relating to crop improvement and protection; pest control, weeds, soils and fertilizers; horticulture, apiculture and special projects, and has a horticultural research centre at Brooks. A tree nursery at Oliver supplies trees for farm planting.

An animal industry division administers legislation, policies and programs related to beef cattle, swine, sheep, horses and poultry. This involves extension and many specific programs such as record of performance, artificial insemination, semen evaluation, feeder associations, warble control, brand registration, brand inspection, stray animals, research projects, cost studies in poultry and a broad range of industry licensing.

The dairy division administers legislation, policies and programs relating to the dairy industry. Testing, grading and purchasing of milk and cream by all dairy plants are regulated. Standards are set for construction, equipment, sanitation, and quality relating to milk production on farms and in dairy plants. A detailed computerized dairy herd

improvement program provides management assistance to producers. A dairy control board administers quotas for both fluid milk and manufacturing milk producers, a provincial fluid milk pooling system and fluid milk pricing.

A veterinary services division provides diagnostic laboratories for animal diseases and investigates disease conditions. The division provides lectures to groups and promotes policies aimed at reducing losses by means of disease control, stockyard inspection and swine health programs.

British Columbia. From its Victoria headquarters the agriculture ministry administers 19 district offices, one laboratory each for dairy, entomology and veterinary sciences, and testing stations for beef cattle and poultry. In addition to traditional services, income and crop insurance programs are provided as well as market promotion campaigns. At the processing level, assistance is available for the establishment and upgrading of facilities.

Agricultural education

11.3.2

All of the provinces of Central and Western Canada have universities giving undergraduate and postgraduate programs in agricultural science and home economics. Ontario, Quebec and Saskatchewan have degree-granting veterinary colleges. In addition, all of these provinces offer diploma programs in community colleges or schools of agriculture. Certain institutes of technology and colleges in Saskatchewan and Alberta offer diploma programs in animal health and meat inspection.

Alberta has three agricultural colleges, Fairview, Olds and Lakeland (Vermilion campus), offering a broad range of diploma programs. Gradual expansion of the module approach in courses has increased and students may enter credit programs at a variety of times and locations. Non-credit short courses focus on specific agricultural activities.

A green certificate program, with on-the-job and classroom training for farm hands and farm managers, is a joint project of farmers, Alberta departments of agriculture and advanced education and manpower, the three agricultural colleges and Lethbridge Community College.

Several more unusual college programs such as turfgrass management and floriculture attract students from other provinces. The colleges participate in interprovincial and international agricultural education under exchange and world youth programs. Curricula have been expanded to meet both growing manpower needs of business and industrial sectors and diversified interests of rural communities.

A number of public and private colleges in Alberta offer one or two years of university-transfer courses applicable toward degree programs in agriculture and veterinary medicine.

At the University of Saskatchewan, Saskatoon, there are colleges of agriculture and veterinary medicine, degree-granting institutions providing undergraduate and postgraduate training. A school of agriculture offers a two-year diploma course providing basic training for young people wishing to farm or work with related industries. A two-year farm machinery mechanics course is offered at Kelsey Institute, Saskatoon for trainees for the farm machinery service industry. Numerous agricultural courses of less than 20 weeks duration are offered throughout the province by three technical institutes and 15 regional community colleges. High schools offer an elective course, Saskatchewan studies — agriculture, which is also available to residents of the province through the provincial government's correspondence school.

The faculty of agriculture, University of Manitoba, offers a four-year course leading to a Bachelor of Science in agriculture and a two-year course leading to a diploma in agriculture. The faculty of agriculture also has an extensive program for graduate studies in agricultural sciences.

In Quebec agricultural science is taught at McGill and Laval universities. The education department has a course in farm management and operation at two CEGEPs, courses are offered at Ste-Croix school of agriculture, and 15 school boards provide vocational training in agriculture in secondary schools. The Quebec agriculture department also operates two institutes of agricultural technology. The education, research and special services division of the Ontario agriculture and food ministry has

five diploma-course programs at the Ontario Agricultural College, University of Guelph, and at the colleges of agricultural technology at Centralia, Kemptville, New Liskeard and Ridgetown. In the Atlantic provinces, the Nova Scotia Agricultural College at Truro, NS, provides the first two years of a four-year program in agricultural science, the first two years in agricultural engineering with the final two years provided by other faculties in Eastern Canada. The college offers several technical programs associated with farming and agribusiness and a variety of vocational courses designed to update farmers and other industry personnel.

11.4 Yearly statistics of agriculture

Collection, compilation and publication of statistics relating to agriculture are the responsibility of Statistics Canada. Valuable information is obtained through censuses, surveys and administrative records.

Statistics Canada collects and publishes primary and secondary statistics of agriculture annually, semi-annually, quarterly and monthly. Primary statistics relate mainly to reporting crop conditions and production, crop and livestock inventories, wages of farm labour and prices received by farmers for their products. Secondary statistics relate to farm income and expenditure, per capita food consumption, marketing of grain and livestock, dairying, milling and sugar industries and cold storage holdings. By collecting annual and monthly statistics, the federal agriculture department and various provincial departments, as well as such agencies as the Canadian Grain Commission and the Canadian Wheat Board, contribute statistical data and aid directly in Statistics Canada survey work. Thousands of farmers throughout Canada send in reports voluntarily and dealers and processors also provide much valuable data.

11.4.1 Farm income

Cash receipts from farming operations. Estimates include cash revenue from the sale of farm products, Canadian Wheat Board participation payments on previous years' grain crops, cash advances on farm-stored grains and deferred income from the sale of grain in Western Canada, deficiency payments made by the Agricultural Stabilization Board and supplementary payments. Cash receipts from the sale of farm products include returns from all sales of agricultural products except those associated with direct inter-farm transfers. The prices used to value all products sold are prices to farmers at the farm level; they include any subsidies, bonuses and premiums that can be attributed to specific products but do not include storage, transportation, processing and handling charges which are not actually received by farmers.

Total farm cash receipts for 1978 reached a record \$11,810 million, an increase of 16.8% above the revised 1977 estimate of \$10,115 million. Livestock and livestock products receipts increased 24% while cash returns from the sale of field crops increased 12.7%. Livestock receipts were up mainly because of prices of cattle, calves and hogs. Major increases in crops receipts occurred in rapeseed, soybeans and tobacco. Potato receipts decreased 7.4% in 1978, contributing to lower crops receipts in the Maritime provinces.

Farm net income. Two different estimates of farm net income are prepared by Statistics Canada. *Realized net income* is obtained by adding farm cash receipts from farming operations, supplementary payments and the value of income in kind, and deducting farm operating expenses and depreciation charges. This represents the amount of income from farming that operators have left for family living, personal taxes and investment. The second estimate, *total net income*, is obtained by adjusting realized net income to take into account changes in livestock inventories and stocks of field crops on farms between the beginning and end of the year. This estimate is used in calculating the contribution of agriculture to the income component of the system of national accounts and for comparison with net income of non-farm business enterprises.

It is estimated that for 1978 realized net income of farm operators from farming operations amounted to \$3,318.1 million, a 21.4% increase over the revised 1977 value

of \$2,732.9 million (Table 11.3). The improved situation was due mainly to an estimated 16% increase in cash receipts. The dollar value of realized net income excludes imputed house rents from the farm accounts.

Total operating expenses and depreciation charges for 1978 are estimated at \$8,693.6 million, 15.1% above the revised 1977 value of \$7,555.6 million. Leading contributors to the increase were interest payments on farm-business debt, rent, total machinery expenses, fertilizer, feed and other miscellaneous expenses.

Total farm net income from farming operations (realized net income adjusted for inventory changes) is estimated at \$3,542.8 million for 1978, a 20.3% increase from the revised 1977 level of \$2,945.6 million. The value of inventory change during 1978 was \$224.7 million, an increase of \$12.1 million from the revised 1977 estimate of \$212.6 million. Changes in crop inventories after adjustments for advances and advance repayments were positive at \$335.1 million, offsetting a negative change in the value of livestock and poultry stocks.

Field crops

11.4.2

The bulk of the Canadian grains and oilseeds (excluding corn) is grown in the three Prairie provinces and the Peace River block of British Columbia. Wheat, the most important product, is produced largely for human consumption. Oats and barley are grown primarily for use as livestock feed. Of the oilseeds, rapeseed yields edible oil and flaxseed is crushed to produce linseed oil for industry; both these crops also produce meal for livestock feed.

Prairie production of wheat usually amounts to about three times domestic consumption, so this is an export-oriented industry. The same may be said of rapeseed and flaxseed. The coarse grains do not enter into international trade to the same extent but large quantities are used as feed in Central and Eastern Canada and British Columbia.

There are approximately 160,000 grain producers in Western Canada and the crop is sold on world markets. A high quality information system covering annual production, stocks on hand and details on movement and location of supplies is essential to the smooth functioning of the trade; it is customary, for instance, to commit supplies for delivery before harvesting the crop. Statistics Canada, in co-operation with the Canadian Grain Commission, the grain trade, provincial departments of agriculture and Canadian farmers, plays a leading role in providing this service.

Livestock and poultry

11.4.3

Total number of cattle and calves in Canada at July 1, 1978 was estimated at 13.7 million head, compared to 14.7 million head at July 1, 1977. Milk cows two years and over were estimated at 1.9 million head, down 3.5%. Beef cows two years and over were estimated at 3.9 million head, down from 4.2 million.

Exports of cattle and calves in 1977 totalled 543,734, up from 477,794 in 1976. Beef exports, cold dressed carcass weight equivalent, decreased from 58 million kilograms in 1976 to 51 million in 1977. Beef imports decreased from 141 million kilograms to 87 million.

Agriculture Canada reported that the weighted average price of A1 and A2 steers over 453.6 kg at Toronto for 1977 was \$98.10 per 100 kg.

Livestock slaughter. Cattle slaughtered at federally inspected packing plants amounted to 3,429,810 head in 1978, down 8.8% from 3,761,419 head in 1977.

Calves slaughtered at federally inspected packing plants amounted to 494,510 head in 1978, down 23.4% from 645,591 head in 1977.

The July 1, 1978 estimate for total number of pigs in Canada excluding Newfoundland was 7.1 million, up from 6.3 million in 1977. Pigs slaughtered in federally inspected and approved plants in 1978 numbered 8.9 million, up from 8.0 million in 1977 as reported by Agriculture Canada. The weighted average price at Toronto (for index 100 hogs, dressed) in 1977 was \$1,344/tonne compared to \$1,413/tonne in 1976 and \$1,311/tonne for the 1972-76 average.

The number of sheep and lambs on farms at July 1, 1978 was estimated at 565,500, up from 543,800 in 1977. Sheep and lambs slaughtered in federally inspected packing

plants in 1978 totalled 97,583 compared to 132,585 in 1977 and 187,674 in 1976. Imports of live animals decreased from 66,807 in 1976 to 43,177 in 1977. Imports of mutton and lamb decreased from 15.2 million kilograms in 1976 to 13.6 million.

Wool. Estimates of production of shorn wool in 1978 at 0.88 million kilograms were 6% lower than in 1977. Average farm price per kilogram was 115.7 cents in 1978 compared to 100.3 cents a kg in 1977.

Poultry and eggs. Estimated number of laying hens on farms at July 1, 1978 was 23.1 million compared to 24.0 million at July 1, 1977. Production and consumption of poultry meat are shown in Table 11.8.

Table 11.18 shows production and value of farm eggs by province. The farm selling price of eggs averaged 64 cents a dozen compared with 65 cents a dozen in 1977. The Atlantic provinces produced 7.6% of all eggs in 1978, Quebec 16.1%, Ontario 39.3%, the Prairie provinces 24.4% and British Columbia 12.7%.

11.4.4 Dairying

The number of dairy cows in Canada at July 1, 1978 was 1,909,000 head, the lowest in recent times. In 1978 milk production stood at 7 614.8 million kilograms compared to 7 742.8 million in 1977. Production is concentrated in Central Canada with Quebec and Ontario together accounting for 74% of Canadian production.

Production of creamery butter in 1978 was 102.5 million kilograms, compared with the 1977 output of 113.3 million. Quebec accounted for 50.5% of butter production and Ontario 29.6%.

Total production of factory cheese for 1978 was 139.8 million kilograms, some 4% above production in 1977; Quebec accounted for 45.2% and Ontario 40.8%.

Total production of concentrated whole milk products, including condensed milk, evaporated milk, whole milk powder, partly skimmed evaporated milk and others, increased 12.8% over 1977. Production of concentrated milk byproducts, including condensed skim milk, evaporated skim milk, skim milk powder, buttermilk powder, whey powder, casein and others, decreased 2.5%.

11.4.5 Horticultural crops

Fruits and vegetables. The fruit and vegetable industry represents an important part of the agricultural and food distribution sectors of the economy. Fresh and processed fruits and vegetables account for more than 40% in quantity of all food consumed in Canada. Over 30 fruit and vegetable crops are grown commercially with an annual farm value of almost \$650 million.

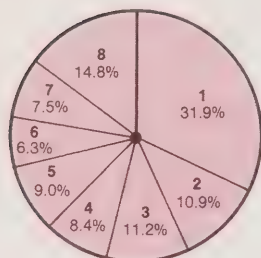
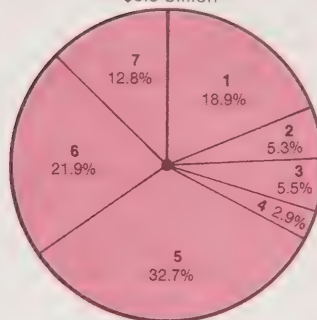
The most important fruit grown in Canada is the apple. Commercial apple orchards are found in Nova Scotia, New Brunswick, Southern Quebec, much of Ontario, and the interior of British Columbia, particularly in the Okanagan Valley. Tender tree fruits — pears, peaches, cherries, plums — are also grown in Ontario, with the most important commercial operations located in the Niagara Peninsula and in Essex County. These fruits, as well as apricots, are also grown on a large scale in the southern Okanagan Valley of British Columbia.

Strawberries and raspberries are cultivated commercially in the Maritimes, Quebec, Ontario and British Columbia. Some fruit growers in British Columbia also produce small quantities of loganberries commercially in the lower mainland area and on Vancouver Island. Grapes are grown in the Niagara district of Ontario and on a smaller scale in British Columbia. The native blueberry is found wild over large areas in Canada and is harvested in commercial quantities in the Maritimes, Quebec and Ontario. A cultivated crop is grown in British Columbia. Commercial cranberry operations are located in Newfoundland, Prince Edward Island, Nova Scotia and British Columbia. Table 11.13 shows commercial production and farm value of fruit grown in 1975-78.

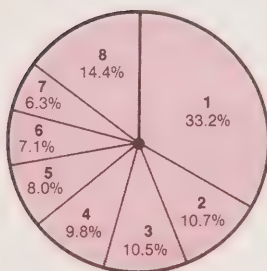
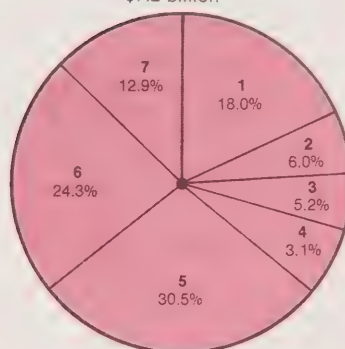
In terms of production and value, potatoes are the most important vegetable produced in Canada. The Maritime provinces comprise the major growing region of the country. Each year a significant volume of the potato crop is processed into chips, flakes or French fries.

Food trade

1978

Imports
\$3.9 billionExports
\$5.8 billion

1979

Imports
\$4.4 billionExports
\$7.2 billion

1. Fruits and vegetables
2. Sugar, confectionary, cocoa and chocolate
3. Coffee
4. Grains and oilseeds
5. Meat
6. Fish
7. Beverages
8. Other

1. Fish
2. Meat
3. Beverages
4. Fruits and vegetables
5. Wheat
6. Other grains and oilseeds
7. Other

The processing industry is closely linked with marketing Canadian-grown fruits and vegetables. Canning is the most common method and peas, corn, beans and tomatoes are the main vegetables processed. Many are grown by farmers under contract to processors.

To meet domestic demand, Canada imports fruits and vegetables. This is partially due to the seasonal nature of production. During the growing season a large percentage of domestic requirements are met from Canadian crops. During the winter when domestic vegetables are not harvested, except in greenhouses, supplies of most fresh vegetables are imported from Canada's major trading partner, the United States. Table 11.14 presents the estimated commercial area and production of vegetables for 1976-78.

Honey. Honey is produced commercially in all provinces except Newfoundland. Alberta is consistently the largest producer followed by Ontario, Manitoba and Saskatchewan. Canadian honey production in 1978 was estimated at 30 585 tonnes or 9% over 1977, when an average of 0.89 kg of honey was available for each Canadian.

The amount of honey sold directly to consumers has been increasing. Beekeepers' co-operatives are active in marketing in several provinces. Processors still buy huge quantities of honey and pasteurize it to facilitate storage, shipment, and uniformity of quality.

In 1978 about 6 689 tonnes of honey was exported. More than half went to the United States but the Federal Republic of Germany was also a major buyer. Table 11.15 lists honey production and value data for 1975-78.

Maple products. Maple syrup is produced commercially in Nova Scotia, New Brunswick, Quebec and Ontario. The bulk of the crop comes from the Eastern Townships of Quebec, famous as the centre of the maple products industry. Virtually all maple exports go to the United States, the largest proportion as syrup. Much of the syrup in Canada is sold directly to the consumer from the producer but both sugar and syrup are sold to processing firms. Production and value of maple sugar and syrup, by province, are shown in Table 11.17.

Greenhouse operations. The greenhouse industry is spread across Canada with the highest concentration in Kent and Essex counties of southwestern Ontario. In 1977 the total area operated by Canadian growers under glass amounted to 2.2 million square metres, an increase of about 4% over the previous year. The total value of operators' sales stood at \$146.8 million in 1976 and \$163.6 million in 1977.

Nursery trades industry. In 1977 this industry had a total revenue of \$140 million, an increase of 8% over 1976. Approximately 42% represented grower sales of traditional nursery stock and 35% was earned by supplying the demand for contracted services.

Tobacco. Total production increased from 81.5 million kilograms in 1976 to 104.3 million in 1977. The average value per kilogram advanced from \$2.23 in 1976 to \$2.38 in 1977 (Tables 11.19 and 11.20). For information on tobacco products see Table 11.21.

11.4.6 Prices of farm products

The index of farm prices of agricultural products (Table 11.22) was designed to measure changes in the average prices farmers receive at the farm for farm products. Average cash prices of major Canadian grains are given in Table 11.23 and yearly average prices of Canadian livestock in Table 11.24.

11.4.7 Food consumption

The data shown in Table 11.25 represent domestic supplies of food available for consumption. Production, beginning stocks, imports less exports, ending stocks, marketing losses and industrial uses are factors used in calculating each commodity. All calculations are made at the retail level of distribution, except figures for meat which are compiled at the wholesale stage. The quantities of food actually consumed would be lower than indicated because of losses and waste occurring after the products reach the consumer.

There are 14 main commodity groupings covering all basic food items. The total for each group is computed by using a common denominator, for example: milk solids (dry weight) for milk and cheese products, fat content for fats and oils, and fresh equivalent for fruits. Most foods are included in their basic form, such as flour, fat, sugar, rather than in more highly manufactured forms.

In 1977 consumption of meat, eggs and cereals declined compared to 1976. Per capita disappearance of oils and fats decreased, but use of margarine continued to rise.

11.5 1976 Census of Agriculture

Number of census-farms. For census year 1976 a census-farm was defined as a holding of 0.4 hectares or more with sales of agricultural products during 1975 of \$1,200

or more. For census year 1971 a sales figure of \$50 was used. Census data for 1971 given here correspond with the 1976 definition of a census-farm. The total number of census-farms in Canada in 1976, at 300,118, was almost the same as in 1971 when there were 299,868 (Table 11.27).

Farm areas. Total area of census-farms in 1976 was 67.2 million hectares, a 3.4% increase from the 64.9 million hectares recorded in 1971 (Table 11.28). Nova Scotia, New Brunswick and Quebec reported decreases in farm areas. All other provinces reported increases. For Canada as a whole, the 43.7 million hectares of improved land for 1976 increased 4.1% from that recorded in 1971. The area of unimproved land increased 2.2% to 23.5 million hectares from 23.0 million hectares. The area under crops, increasing by 4.8%, accounted for the majority of this increase.

Economic classification. All census-farms in 1976, except institutional farms, such as experimental farms, community pastures and Indian reserves (but including Hutterite colonies), were divided into 10 economic classes (Table 11.29) presenting a measure of the productive size of the holdings. In previous censuses sales were reported by commodity. In 1976, the operator was asked to indicate the range which corresponded to total sales of agricultural products during 1975.

Type of farm. Since the sales information collected in 1976 was not detailed by commodity, the farm typing scheme was based on potential value of sales by commodities. This value was imputed from the 1976 physical inventories reported for the census-farm. With the exception of farms classified as institutional, all census-farms in 1976 with \$2,500 or more of agricultural sales were classified as one of 10 major product types if 51.0% or more of the potential sales were obtained from this class of products.

Size of census-farms. In 1976, 43% of census-farms in Canada contained less than 97.1 hectares compared with 42% in 1971. This relatively small change suggests that the trend toward consolidation into larger holdings may have moderated. However, wide variation among provinces continues. The proportion of farms under 97.1 hectares in the Atlantic provinces ranged from 50.2% in New Brunswick to 88.4% in Newfoundland; in Quebec 69.0%, Ontario 74.1%, Manitoba 20.7%, Saskatchewan 10.0%, Alberta 21.7% and British Columbia 70.6%.

Age of census-farm operators. About 19% of census-farm operators were under 35 in 1976, 50% were in the 35-54 age group and 31% were over 55. Corresponding percentages for 1971, at 15%, 53% and 32%, show a trend to younger operators.

Farm machinery. Table 11.35 indicates that between 1971 and 1976 forage crop harvesters increased by 25.9%, farm trucks by 25.5%, swathers by 13.1%, tractors by 12.0%, pick-up balers by 7.5%, automobiles by 5.4% and grain combines by 4.7%.

Product and marketing controls

11.6

Both federal and provincial governments have always been concerned with encouraging and assisting a productive and efficient agricultural sector. Numerous measures have been enacted over the years. Originally, emphasis was on production increases and control of pests and diseases. Gradually, with rising production and increasing farm specialization, problems in marketing began to emerge.

To ensure quality, grading procedures and standards were established. Periodic price collapses caused by bumper crops and intensified by the general inability of producers to bargain on an equitable basis with far fewer buyers became a much more difficult part of the marketing problem.

The first attempt to provide bargaining power to producers was the organization of voluntary marketing co-operatives. All provinces eventually passed legislation for incorporation of co-operatives, and most of them also provided various forms of assistance. Federally, the Agricultural Products Co-operative Marketing Act provided financial guarantees to producers willing to market their crops on a pooling-of-returns basis. More information on co-operative organizations is given in Chapter 19.

Although much co-operative marketing was initially successful, the voluntary aspect was a weakness. Many members dropped out in good times to make their own deals. A type of marketing organization was needed with the legal power to control the output of all producers of a certain product in a certain area. As a result, marketing control legislation was adopted providing for various types of boards, agencies and commissions.

11.6.1 Quality standards

Federal and provincial departments of agriculture co-operate in establishing and enforcing quality standards for various foods. Some control over size and types of containers used is exercised by Agriculture Canada, and the Department of Consumer and Corporate Affairs enforces regulations pertaining to weights and measures.

Standards related to health and sanitation in food handling are developed and enforced at all levels of government. Examples of provincial and municipal action include laws pertaining to milk pasteurization, slaughter house inspection and sanitary standards in restaurants. At the federal level, inspection is required by the health of animals branch of the agriculture department of all meat carcasses that enter into interprovincial trade; the health and welfare department has wide responsibility for food composition standards; and the consumer and corporate affairs department has jurisdiction over advertising.

11.6.2 Marketing controls

The Agricultural Products Co-operative Marketing Act (RSC 1970, c.A-6) was passed in 1939 as a result of a federal government decision to assist orderly marketing by encouraging establishment of pools that would give the producer the maximum sales return for his product, less a margin for handling expenses agreed upon in advance. All agricultural products except wheat produced in the Canadian Wheat Board area are eligible for marketing assistance under this act.

The purpose of this act is to aid farmers in pooling returns from sale of their products by guaranteeing initial payments and thus assisting in the orderly marketing of the product. The government may undertake to guarantee a certain minimum initial payment to the producer at the time of delivery of the product, including a margin for handling; sales returns are made to the producer on a co-operative plan. Amount of the initial payment is set at the discretion of the minister taking into account current and estimated market prices. Since its inception this act has enabled many farmers to market their crops at a fair return in an organized and systematic manner.

The Canadian Dairy Commission, established in 1966, was the first national marketing agency to be established since creation of the Canadian Wheat Board in 1935. The commission has the power to stabilize the market by offering to purchase major dairy products, butter and skim milk powder, at fixed prices and to package, process, store, ship, insure, import, export or sell or otherwise dispose of any dairy product purchased by it. The commission may also pay subsidies to producers of manufacturing milk and cream. These payments, up to \$260.7 million in 1978-79, supplement returns to producers and permit market prices to be kept at reasonable levels. Each producer is eligible for subsidy on shipments covered by his market share quota. The commission administers an account to cover the cost of export marketing operations. Money for this is collected by levies from producers in all provinces except Newfoundland under a market-sharing quota program and remitted to the commission. The funds are used to equalize export prices with domestic prices for products exported below domestic prices.

A comprehensive milk marketing plan, to balance demand and supply and equalize export assistance, was agreed to by the Canadian Dairy Commission and the milk marketing agencies of Ontario and Quebec in January 1971, establishing a market-sharing quota (MSQ) system for industrial milk and cream and that portion of milk, shipped by fluid producers, which is used for manufacturing purposes. Cream shippers in Quebec, Ontario and Prince Edward Island entered the plan in 1971. Producers in Alberta, Manitoba and Saskatchewan came under the program in 1972, British Columbia in 1973, and Nova Scotia and New Brunswick in 1974. All manufacturing

milk and cream sold in Canada now come under the market-sharing program. The arrangement provides that each producer receives returns related to the target support price for manufacturing shipments up to his market share. The target support price is achieved through the offer-to-purchase program which stabilizes markets, plus direct payments to producers. Producer returns for deliveries over market share are related to world prices for surplus dairy products.

Producer marketing boards were introduced during the 1930s to give agricultural producers legal authority under certain conditions to control marketing of their produce. The Natural Products Marketing Act of 1934 attempted to provide this power at the federal level but the courts ruled that the subject was outside federal jurisdiction. The subsequently introduced Natural Products Marketing (British Columbia) Act, 1936 was found to be within the powers of provincial governments and it has since been used as a model for marketing board legislation as it evolved in all provinces.

The basic feature which enables marketing boards to control marketing is the compulsory aspect. A new board usually has to be first approved by a majority vote of the producers of the affected product. If it is approved, all producers of the product in the designated area, other than those who may be exempted as below a specified minimum production level, are required by law to market their produce under authority of the board. Depending on a board's objectives and the type of product, its powers and duties may only involve negotiating a minimum price or may include production or marketing quotas, designated times and places for marketing, or such other powers which may be considered necessary to ensure an orderly and equitable market.

The powers of a producer marketing board provided by provincial legislation are necessarily limited to trade within the province. Under the Agricultural Products Marketing Act (RSC 1970, c.A-7), passed in 1949, the federal government may delegate to a marketing board powers with respect to interprovincial and export trade similar to those it holds under provincial authority with respect to intraprovincial trade. This act also gives the Governor-in-Council the right to authorize a provincial marketing board to impose and collect levies from persons engaged in production and marketing of commodities controlled by it for the purposes of the board including creation of reserves and equalization of returns.

The federal Farm Products Marketing Agencies Act passed in January 1972 is the enabling legislation for the creation of national marketing agencies or boards. National agencies may be set up, when producers and provincial authorities desire it, for any agricultural commodities which, owing to widespread production in Canada or for other reasons, cannot be effectively marketed in an orderly manner under the jurisdiction of individual provincial boards.

The National Farm Products Marketing Council (NFPMC) was established by the Farm Products Marketing Agencies Act in 1972 to advise the agriculture minister on matters pertaining to establishment of marketing agencies. It reviews their operations, assists them in promoting more effective marketing of farm products, and co-ordinates related activities of provincial governments as well as efforts of producers to establish marketing plans. Membership of the NFPMC includes representatives of consumer, labour and business interests.

The first national agency formed under the act, the Canadian Egg Marketing Agency, commenced operation in June 1973 and the second, the Canadian Turkey Marketing Agency, in March 1974. Creation of a chicken marketing agency was announced in December 1978. These federal agencies work in conjunction with provincial boards; they do not deal directly with producers.

During 1977-78 there were 111 provincially authorized marketing boards operating in Canada, including the milk control boards which have a lesser degree of producer control than the others, as well as the earlier mentioned federal boards. Boards are established in all provinces, led by Quebec with 25 and Ontario with 23. An estimated 60% of 1977 farm cash income was received from sales made under the jurisdiction of marketing boards. A variety of agricultural commodities sold under marketing boards included grains, hogs, milk, fruit, potatoes and other vegetables, tobacco, poultry, eggs, wood, soybeans, honey, maple products and pulpwood. At year end 1978, the federal

government had delegated authority to 80 provincial boards to control marketing of their products in interprovincial and export trade.

Sources

- 11.1 Information Division, Agriculture Canada.
- 11.2 Information Division, Agriculture Canada; Grain Marketing Office, Department of Industry, Trade and Commerce; Farm Improvement Loans Administration, Agriculture Canada; Agriculture Stabilization Board; Crop Insurance Division, Agriculture Canada; Canadian Livestock Feed Board; Farm Credit Corporation.
- 11.3 Supplied by respective provincial government departments.
- 11.4 Agriculture Division, Institutions and Agriculture Statistics Branch, Social Statistics Field, Statistics Canada; Food, Beverages and Textiles Section, Manufacturing and Primary Industries Division, Statistics Canada.
- 11.5 Census of Agriculture Division, Institutions and Agriculture Statistics Branch, Social Statistics Field, Statistics Canada.
- 11.6 Co-operatives Unit, Food Production and Marketing Branch, Agriculture Canada; Canadian Dairy Commission; Information Division, Agriculture Canada.

Tables

... not available
 ... not appropriate or not applicable
 — nil or zero
 e too small to be expressed
 e estimate
 p preliminary
 r revised

Equivalent values of metric units:
 1 hectare (ha) = 2.47 acres
 1 metric tonne (t) wheat = 36.744 bu
 oats = 64.842 bu
 barley = 45.930 bu
 certain tables may not add due to rounding

It should be noted that figures shown for the latest year are subject to revision, and that some figures for earlier years have been revised. Figures for Newfoundland are not included, as agricultural activity there is of minor importance and production small.

11.1 Cash receipts from farming operations (excluding supplementary payments), by province, 1973-78 (thousand dollars)

Province	1973 ^r	1974 ^r	1975 ^r	1976 ^r	1977	1978 ^p
Prince Edward Island	73,158	85,527	84,901	103,455	89,109	99,537
Nova Scotia	97,303	102,737	113,847	126,413	132,886	151,665
New Brunswick	94,215	103,248	98,954	113,087	109,867	122,285
Quebec	966,520	1,137,568	1,341,098	1,370,065	1,425,749	1,649,913
Ontario	2,055,442	2,511,014	2,684,429	2,780,354	2,863,514	3,363,884
Manitoba	629,645	827,057	931,958	885,100	889,765	1,104,833
Saskatchewan	1,463,494	2,077,854	2,469,503	2,304,476	2,136,551	2,471,765
Alberta	1,231,057	1,702,716	1,879,823	1,841,813	1,951,448	2,284,357
British Columbia	345,630	406,250	422,241	480,347	515,746	561,821
Total	6,956,464	8,953,971	10,026,754	10,005,110	10,114,635	11,810,060

11.2 Cash receipts from farming operations, by commodity or other source, 1974-78 (thousand dollars)

Item	1974 ^r	1975 ^r	1976 ^r	1977	1978 ^p
Wheat	1,548,072	1,699,193	1,642,770	1,649,805	1,679,165
Wheat, Canadian Wheat Board payments	506,112	826,920	412,214	131,029	126,910
Oats	55,552	60,212	70,696	56,792	47,347
Oats, Canadian Wheat Board payments	—	27,809	11,665	13,956	5,258
Barley	468,539	465,659	451,293	319,237	400,194
Barley, Canadian Wheat Board payments	96,069	149,479	44,107	102,280	84,798
Western Grain Stabilization Act ¹	—	—	—	—	115,000
Canadian Wheat Board cash advances	48,105	19,866	102,689	125,697	136,820
Canadian Wheat Board cash advance repayments	—36,684	—33,765	—44,247	—120,026	—119,154
Deferred grain receipts	—625,816	—695,450	—546,270	—434,034	—351,921
Liquidation of deferred grain receipts	305,246	625,816	695,450	546,270	434,034
Rye	25,013	27,117	27,659	21,366	22,660
Flaxseed	135,435	81,340	77,546	86,679	102,118
Rapeseed	338,628	260,022	227,809	432,759	586,405
Soybeans	78,511	44,925	78,143	78,668	156,230
Corn	164,156	152,979	157,642	157,023	189,930
Sugar beets	43,799	39,919	36,275	31,282	30,561
Potatoes	202,701	159,148	199,675	173,771	160,836
Fruits	140,232	130,497	147,096	175,289	178,916
Vegetables	191,677	242,593	243,679	261,348	251,014
Floriculture and nursery	116,729	141,849	170,390	184,493	201,200
Tobacco	205,728	195,861	233,857	179,274	268,102
Other crops	176,992	151,767	169,284	187,232	205,652
Total, cash receipts from crops	4,184,796	4,773,756	4,609,422	4,360,190	4,912,075
Cattle and calves	1,751,577	1,873,980	1,940,949	2,102,918	2,877,839
Pigs	775,218	878,970	829,019	837,925	1,156,158
Sheep and lambs	12,884	12,645	12,163	12,784	14,656
Dairy products	1,095,903	1,347,248	1,331,318	1,413,824	1,508,513
Poultry	464,209	411,814	477,102	484,382	541,662
Eggs	276,245	269,767	295,580	300,697	303,492
Other livestock and products	77,188	81,888	88,658	102,134	113,125
Total, cash receipts from livestock and products	4,453,224	4,876,312	4,974,789	5,254,664	6,515,445
Forest and maple products	44,800	44,526	54,246	62,163	72,898
Dairy supplementary payments	221,059	259,770	258,868	269,447	242,511
Deficiency payments	36,041	22,596	24,791	48,690	42,612
Provincial income stabilization program	14,051	49,794	82,994	119,481	24,519
Total, cash receipts (excl. supplementary payments)	8,953,971	10,026,754	10,005,110	10,114,635	11,810,060
Supplementary payments	57,475	30,290	—	—	—
Total, cash receipts	9,011,446	10,057,044	10,005,110	10,114,635	11,810,060

¹ Subsidy started in 1978.

11.3 Net income of farm operators from farming operations¹, by item and by province, 1974-78 (thousand dollars)

Item and province	1974 ^r	1975 ^r	1976 ^r	1977	1978 ^p
ITEM					
1. Cash receipts from farming operations	8,953,971	10,026,754	10,005,110	10,114,635	11,810,060
2. Income in kind	157,513	154,729	160,459	173,866	201,647
3. Supplementary payments	57,475	30,290	—	—	—
4. Realized gross income (items 1 + 2 + 3)	9,168,959	10,211,773	10,165,569	10,288,501	12,011,707
5. Operating and depreciation charges	5,517,586	6,337,311	7,115,902	7,555,577	8,693,628
6. Realized net income (items 4-5)	3,651,373	3,874,462	3,049,667	2,732,924	3,318,079
7. Value of inventory changes	-71,180	261,432	327,214	212,644	224,704
8. Total gross income (items 4 + 7)	9,097,779	10,473,205	10,492,783	10,501,145	12,236,411
Total, net income (8-5)	3,580,193	4,135,894	3,376,881	2,945,568	3,542,783
PROVINCE					
Prince Edward Island	52,445	15,017	44,120	22,091	24,021
Nova Scotia	23,371	24,828	32,988	41,051	50,796
New Brunswick	55,173	19,657	35,205	28,465	31,629
Quebec	399,753	464,725	408,610	391,509	491,115
Ontario	812,348	905,267	676,711	801,964	798,436
Manitoba	318,254	397,741	289,879	303,006	408,705
Saskatchewan	1,152,776	1,487,176	1,285,636	853,671	966,591
Alberta	669,004	744,720	507,531	378,506	649,367
British Columbia	97,069	76,763	96,201	125,305	122,123

¹Includes estimated value of farm homes supplementary payments made under the provisions of the Prairie Farm Assistance Act and payments under the Western Grain Producers Acreage Payment Regulations.

11.4 Harvested area and production of field crops, by province, 1977 and 1978

Field crop and province	Area		Total production	
	1977 ^r '000 ha	1978 '000 ha	1977 ^r '000 t	1978 '000 t
WHEAT	10 114	10 574	19 861.6	21 145.4
Prince Edward Island	6	5	15.4	15.2
Nova Scotia	2	2	4.7	5.8
New Brunswick	3	4	7.2	10.3
Quebec	36	36	74.5	97.7
Ontario				
Winter	239	136	842.9	373.9
Spring	8	8	18.5	18.5
Manitoba	1 290	1 371	2 748.7	2 830.4
Saskatchewan	6 557	6 920	12 845.7	13 607.8
Alberta	1 943	2 064	3 238.7	4 136.8
British Columbia	30	28	65.3	49.0
OATS	2 131	1 829	4 303.0	3 620.8
Prince Edward Island	17	17	34.5	36.3
Nova Scotia	6	7	10.2	15.0
New Brunswick	16	17	20.7	32.5
Quebec	203	207	327.6	391.6
Ontario	182	180	330.5	358.6
Manitoba	425	304	894.5	632.3
Saskatchewan	627	486	1 233.8	940.8
Alberta	627	587	1 388.0	1 172.1
British Columbia	28	24	63.2	41.6
BARLEY	4 751	4 259	11 798.5	10 387.4
Prince Edward Island	11	16	29.6	45.7
Nova Scotia	2	2	4.0	4.9
New Brunswick	3	3	4.3	7.0
Quebec	20	25	43.2	63.5
Ontario	129	146	337.0	418.6
Manitoba	770	708	2 046.6	1 850.7
Saskatchewan	1 538	1 250	3 723.1	2 917.5
Alberta	2 206	2 044	5 443.1	4 964.1
British Columbia	73	65	167.6	115.4
FALL RYE	229	297	378.5	572.3
Quebec	4	4	6.3	5.4
Ontario	17	18	32.3	34.3
Manitoba	44	50	82.6	97.7
Saskatchewan	91	129	138.4	219.7
Alberta	71	93	114.3	208.3
British Columbia	2	3	4.6	6.9
SPRING RYE	21	21	28.0	33.1
Manitoba	1	1	1.3	1.4
Saskatchewan	10	12	14.0	16.5
Alberta	10	8	12.7	15.2
ALL RYE	250	318	406.5	605.4
Quebec	4	4	6.3	5.4
Ontario	17	18	32.3	34.3
Manitoba	45	51	83.9	99.1
Saskatchewan	101	141	152.4	236.2
Alberta	81	101	127.0	223.5
British Columbia	2	3	4.6	6.9

11.4 Harvested area and production of field crops, by province, 1977 and 1978 (concluded)

Field crop and province	Area		Total production	
	1977 ^r '000 ha	1978 '000 ha	1977 ^r '000 t	1978 '000 t
PEAS	34	39	54.9	79.8
Manitoba	22	25	36.7	51.7
Saskatchewan	9	11	12.8	21.8
Alberta	3	3	5.4	6.3
BEANS	70	67	50.2	85.8
Ontario	70	67	50.2	85.8
SOYBEANS	223	285	580.0	516.0
Ontario	223	285	580.0	516.0
BUCKWHEAT	43	61	43.9	72.8
Quebec	5	6	5.7	6.7
Ontario	6	6	5.5	7.3
Manitoba	32	49	32.7	58.8
MIXED GRAINS	624	606	1 607.2	1 639.0
Prince Edward Island	32	30	87.1	86.9
Nova Scotia	2	2	5.0	7.0
New Brunswick	2	3	3.7	6.7
Quebec	40	43	91.3	109.3
Ontario	328	328	900.6	954.0
Manitoba	69	65	163.3	155.1
Saskatchewan	40	32	85.7	71.4
Alberta	109	101	265.4	244.9
British Columbia	2	2	5.1	3.7
FLAXSEED	596	518	650.3	558.8
Manitoba	304	304	330.2	317.5
Saskatchewan	243	182	271.8	203.2
Alberta	49	32	48.3	38.1
RAPESEED	1 452	2 801	1 973.1	3 474.5
Manitoba	202	425	290.3	578.3
Saskatchewan	587	1 133	839.1	1 451.5
Alberta	627	1 170	805.1	1 383.5
British Columbia	36	73	38.6	61.2
SUNFLOWER SEED	68	86	81.0	113.9
Manitoba	67	82	79.4	108.9
Saskatchewan	1	4	1.6	5.0
MUSTARD SEED	73	98	79.3	103.3
Manitoba	16	25	16.3	29.0
Saskatchewan	40	53	47.6	50.3
Alberta	17	20	15.4	24.0
SHELLED CORN	725	783	4 196.6	4 214.8
Quebec	63	67	290.0	390.2
Ontario	652	680	3 867.2	3 677.3
Manitoba	10	36	39.4	147.3
POTATOES	111	111	2 487.6	2 443.2
Prince Edward Island	22	23	540.4	547.3
Nova Scotia	2	2	28.3	29.4
New Brunswick	23	23	503.2	540.1
Quebec	18	19	364.3	344.3
Ontario	19	18	488.1	398.8
Manitoba	15	15	249.5	308.4
Saskatchewan	1	1	19.0	16.3
Alberta	7	7	167.8	158.8
British Columbia	4	4	127.0	99.8
TAME HAY	5 600	5 607	24 735.4	26 916.2
Prince Edward Island	58	57	243.1	279.4
Nova Scotia	74	73	326.6	351.1
New Brunswick	74	73	316.6	326.6
Quebec	1 078	1 103	4 496.9	4 993.1
Ontario	1 111	1 153	6 742.2	6 451.0
Manitoba	567	567	2 358.7	2 630.8
Saskatchewan	870	850	2 721.6	3 447.3
Alberta	1 497	1 460	5 806.0	6 713.2
British Columbia	271	271	1 723.7	1 723.7
FODDER CORN	492	486	14 524.1	13 809.3
Prince Edward Island	4	4	82.6	129.7
Nova Scotia	5	5	116.1	147.9
New Brunswick	3	3	59.0	97.1
Quebec	104	107	3 480.0	3 596.1
Ontario	350	340	10 078.8	9 022.0
Manitoba	16	17	317.5	362.9
British Columbia	9	10	390.1	453.6
SUGAR BEETS	26	25	1 010.9	946.5
Quebec	2	2	68.3	98.3
Manitoba	10	10	399.2	371.9
Alberta	14	13	543.4	476.3

11.5 Harvested area and production of grain in the Prairie provinces, 1973-78

Grain	1973	1974 ^r	1975 ^r	1976 ^r	1977 ^r	1978
HARVESTED AREA ('000 ha)						
Wheat	9 348	8 701	9 227	10 967	9 790	10 355
Oats	2 145	1 942	1 882	1 882	1 679	1 377
Barley	4 593	4 532	4 209	4 087	4 514	4 002
Rye	236	324	300	220	227	293
Flaxseed	587	587	566	323	596	518
Rapeseed	1 275	1 254	1 801	709	1 416	2 728
PRODUCTION ('000 t)						
Wheat	15 622	12 655	16 329	22 752	18 833	20 575
Oats	4 210	3 054	3 547	3 964	3 516	2 745
Barley	9 667	8 252	8 905	9 907	11 213	9 732
Rye	327	450	483	381	363	559
Flaxseed	493	350	445	277	650	559
Rapeseed	1 207	1 143	1 814	826	1 934	3 413

11.6 Carryover of Canadian grain, 10-year average 1969-78 and crop years ended July 31, 1975-79 (thousand tonnes)

Grain and year	Total in Canada and United States	Total in Canada	In com- mercial storage in Canada	On farms in Canada	Prairie provinces	
					On farms	In primary elevators
Wheat						
Av. 1969-78	14 798.8	14 798.8	8 315.3	6 483.5	6 382.1	4 501.6
1975 ^r	8 037.6	8 037.6	6 404.6	1 633.0	1 496.9	2 707.3
1976 ^r	7 979.7	7 979.7	6 400.7	1 579.0	1 496.9	2 713.7
1977 ^r	13 319.5	13 319.5	6 160.5	7 159.0	7 076.0	2 526.3
1978	12 114.7	12 114.7	7 107.7	5 007.0	4 899.0	4 178.5
1979	15 073.9	15 073.9	5 956.9	9 117.0	8 981.0	3 564.0
Oats						
Av. 1969-78	1 582.6	1 582.6	380.1	1 202.5	984.0	235.3
1975 ^r	1 132.6	1 132.6	391.6	741.0	539.8	260.3
1976	1 231.1	1 231.1	429.1	802.0	616.9 ^r	257.0
1977 ^r	1 327.6	1 327.6	294.6	1 033.0	848.2	162.7
1978	1 683.3	1 683.3	479.3	1 204.0	1 003.0	362.6
1979	1 520.4	1 520.4	417.4	1 103.0	848.0	351.5
Barley						
Av. 1969-78	3 987.1	3 987.1	2 101.7	1 885.4	1 748.3	1 206.0
1975 ^r	4 103.9	4 103.9	2 993.9	1 110.0	979.8	1 526.3
1976 ^r	2 762.9	2 762.9	1 674.9	1 088.0	979.8	771.4
1977 ^r	3 218.1	3 218.1	2 086.1	1 132.0	1 045.1	1 334.7
1978	5 207.9	5 207.9	2 094.9	3 113.0	2 939.0	1 315.3
1979	4 895.6	4 895.6	1 694.6	3 201.0	3 047.0	825.1
Rye						
Av. 1969-78	303.6	303.6	209.7	94.0	94.0	124.3
1975 ^r	347.5	347.5	250.5	97.0	97.0	150.2
1976 ^r	310.3	310.3	223.3	87.0	87.0	149.1
1977 ^r	341.6	341.6	288.6	53.0	53.0	175.1
1978	275.2	275.2	212.2	63.0	63.0	164.5
1979	502.7	502.7	247.7	255.0	255.0	178.3
Flaxseed						
Av. 1969-78	299.7	299.7	228.5	71.2	71.2	123.8
1975 ^r	219.1	219.1	155.1	64.0	64.0	88.6
1976 ^r	380.8	380.8	329.8	51.0	51.0	193.0
1977 ^r	212.3	212.3	186.3	26.0	26.0	115.1
1978	471.6	471.6	366.6	105.0	105.0	251.3
1979	371.3	371.3	244.3	127.0	127.0	179.4
Rapeseed						
Av. 1969-78	416.4	416.4	321.1	95.4	95.2	180.7
1975 ^r	400.3	400.3	309.3	91.0	91.0	173.6
1976 ^r	1 048.0	1 048.0	697.0	351.0	349.3	480.9
1977 ^r	199.3	199.3	174.3	25.0	25.0	81.4
1978	325.7	325.7	290.7	35.0	35.0	157.9
1979	1 067.6	1 067.6	818.6	249.0	248.0	425.4

11.7 Livestock slaughtered at federally inspected establishments, 1972-78

Year	Cattle	Calves	Sheep	Pigs
1972	2,878,591	402,370	214,769	9,357,143
1973	2,878,016	291,524	234,206	8,721,921
1974	2,975,833	392,811	185,077	8,939,335
1975	3,337,687	682,094	186,566	7,656,334
1976	3,676,284	655,443	187,674	7,493,245
1977	3,761,419	645,591	132,585	8,007,313
1978	3,429,810	494,510	97,583	8,934,470

11.8 Production and domestic disappearance of poultry meat¹, 1977 and 1978

Year and item	Net production t	Total supply t	Domestic disappearance t	Per capita consumption kg
1977				
Fowl and chickens	358 740	399 346	385 207	16.5
Turkeys	96 499	114 619	98 558	4.2
Geese	—	—	—	—
Ducks	—	—	—	—
Total	455 239	513 965	483 765	20.7
1978				
Fowl and chickens	383 579	424 341	409 304	17.4
Turkeys	93 104	111 664	100 842	4.3
Geese	—	—	—	—
Ducks	—	—	—	—
Total	476 683	536 005	510 146	21.7

¹Eviscerated weight.

11.9 Production and utilization of milk, by province, 1976-78

Province and year	Farm sales of milk and cream			Whole milk used on farms		Total milk production t
	Fluid t	Industrial Milk t	Cream ¹ t	Farm home consumed t	Fed to livestock t	
Prince Edward Island						
1976	13 995	54 949	14 093	2 962	4 709	90 708
1977	15 442	55 502	12 695	2 792	4 278	90 709
1978	15 910	59 505	11 627	2 862	4 014	93 918
Nova Scotia						
1976	99 645	46 307	5 890	3 942	4 769	160 553
1977	100 645	48 728	5 541	3 502	3 822	162 238
1978	105 043	53 483	5 714	3 439	3 480	171 159
New Brunswick						
1976	65 364	24 062	13 992	2 759	3 777	109 954
1977	66 646	23 421	11 950	2 327	3 363	107 707
1978	69 415	26 531	11 012	2 157	3 346	112 461
Quebec						
1976	556 617	2 245 559	9 535	39 094	159 503	3 010 308
1977	568 870	2 314 491	7 621	36 173	125 497	3 052 652
1978	591 453	2 231 458	5 600	35 453	125 742	2 989 706
Ontario						
1976	997 027	1 384 649	98 303	38 287	199 469	2 717 735
1977	1 002 510	1 418 280	95 034	36 488	169 291	2 721 603
1978	1 018 252	1 320 301	102 212	35 928	168 766	2 645 459
Manitoba						
1976	110 993	126 618	51 444	13 199	26 699	328 953
1977	114 438	128 110	49 609	11 544	23 976 ^r	327 677 ^r
1978	113 456	131 998	45 972	10 814	20 752	322 992
Saskatchewan						
1976	91 011	47 501	52 809	21 592	21 704	234 617
1977	99 923	51 691	48 733	18 201	15 323	233 871
1978	104 484	55 815	46 046	16 607	14 265	237 217
Alberta						
1976	195 875	203 395	108 850	23 576	49 594	581 290
1977	207 366	215 058	98 913	23 568	39 791	584 696
1978	226 536	209 057	80 861	23 027	37 807	577 288
British Columbia						
1976	269 424	141 100	1 613	7 835	31 145	451 117
1977	276 774	144 773	1 414	8 110	30 560	461 631
1978	289 648	134 646	1 463	7 859	30 984	464 600
Total						
1976	2 399 951	4 274 140	356 529	153 246	501 369	7 685 235
1977	2 452 614	4 400 054	331 510	142 705	415 901 ^r	7 742 784 ^r
1978	2 534 197	4 222 794	310 507	138 146	409 156	7 614 800

¹Farm separated cream expressed in terms of milk equivalent.

11.10 Cash receipts from milk and cream, sold off farms, by province, 1976-78 (thousand dollars)

Province and year		Farm sales of milk and cream			Supplementary payments	Total ¹ cash receipts	
		Fluid purposes	Industrial purposes				Total
			Delivered as milk	Delivered as cream			
Prince Edward Island	1976	3,525	7,276	1,207	12,008	3,961	15,969
	1977 ^r	4,043	7,400	1,198	12,641	4,025	16,666
	1978	4,472	8,960	1,143	14,575	4,172	18,747
Nova Scotia	1976	28,052	8,096	503	36,651	2,903	39,554
	1977 ^r	29,161	8,673	499	38,333	3,160	41,493
	1978	32,123	10,337	565	43,025	3,289	46,314
New Brunswick	1976	17,715	3,495	1,130	22,340	2,041	24,381
	1977 ^r	18,453	3,206	1,053	22,712	2,052	24,764
	1978	20,005	4,036	1,047	25,088	2,306	27,394

11.10 Cash receipts from milk and cream, sold off farms, by province, 1976-78 (thousand dollars) (concluded)

Province and year		Farm sales of milk and cream			Total	Supplementary payments	Total ¹ cash receipts
		Fluid purposes	Industrial purposes	Delivered as milk			
				Delivered as cream			
Quebec	1976	146,779	345,657	808	493,244	127,711	620,955
	1977 ^r	151,546	373,642	680	525,868	136,472	662,340
	1978	164,870	404,662	537	570,069	121,832	691,901
Ontario	1976	256,840	217,108	7,911	481,859	84,398	566,257
	1977 ^r	266,208	233,570	8,340	508,118	91,061	599,179
	1978	282,599	232,397	9,517	524,513	81,444	605,957
Manitoba	1976	28,162	19,927	3,998	52,087	9,742	61,829
	1977 ^r	29,395	19,604	4,123	53,122	10,589	63,711
	1978	30,770	22,604	3,961	57,335	10,445	67,780
Saskatchewan	1976	22,241	6,208	4,295	32,744	5,806	38,550
	1977 ^r	25,275	7,116	4,754	37,145	6,159	43,304
	1978	28,506	8,761	4,822	42,089	6,449	48,538
Alberta	1976	51,659	31,739	9,265	92,663	17,257	109,920
	1977 ^r	55,224	35,331	8,835	99,390	17,212	116,602
	1978	61,544	37,582	7,603	106,729	17,791	124,520
British Columbia	1976	79,239	28,374	109	107,722	7,894	115,616
	1977 ^r	86,063	30,325	107	116,495	9,395	125,890
	1978	94,336	30,627	127	125,090	7,671	132,761
Total	1976	634,212	667,880	29,226	1,331,318	261,713	1,593,031
	1977 ^r	665,368	718,867	29,589	1,413,824	280,125	1,693,949
	1978	719,225	759,966	29,322	1,508,513	255,399	1,763,912

¹Adjusted for provincial levies on manufacturing milk and cream.

11.11 Production of butter and cheese, by province, 1976-78

Province and year		Butter				Cheese Factory ¹
		Creamery	Farm	Whey	Total	
Prince Edward Island	1976	1 662	—	45	1 707	^a
	1977	1 689	—	52	1 741	^a
	1978	984	—	54	1 038	^a
Nova Scotia	1976	561	—	—	561	3 059 ^a
	1977 ^r	582	—	—	582	3 537 ^a
	1978	1 281	—	—	1 281	3 923
New Brunswick	1976	903	—	—	903	^a
	1977	924 ^r	—	—	924 ^r	^a
	1978	873	—	—	873	^a
Quebec	1976	58 524	—	2 192	60 716	56 187
	1977	58 780	—	1 623 ^r	60 403 ^r	58 816 ^r
	1978	51 775	—	2 089	53 864	63 144
Ontario	1976	33 686	—	2 228	35 914	52 917
	1977	32 472	—	1 777	34 249	57 302 ^r
	1978	30 322	—	1 839	32 161	57 065
Manitoba	1976	4 055	—	—	4 055	4 616
	1977	4 131	—	—	4 131	5 929
	1978	4 277	—	—	4 277	6 196
Saskatchewan	1976	3 750	—	—	3 750	768
	1977	3 723	—	—	3 723	1 542
	1978	3 946	—	—	3 946	1 506
Alberta	1976	8 282	—	—	8 282	4 609
	1977	8 417	—	—	8 417	5 471 ^r
	1978	6 971	—	—	6 971	6 154
British Columbia	1976	2 666	—	—	2 666	1 494
	1977	2 548	—	—	2 548	1 790
	1978	2 110	—	—	2 110	1 840
Total	1976	114 089	—	4 465	118 554	125 464
	1977 ^r	113 266	—	3 452	116 718	134 387
	1978	102 539	—	3 982	106 521	139 828

¹Factory-made cheese includes cheddar and other cheese made from whole milk and cream. Amounts for other cheese are included in Quebec, Ontario and Alberta figures, but, as fewer than three firms reported in the other provinces, data cannot be included except in the Canada total.

^aIncluded with Nova Scotia.

^rIncludes Prince Edward Island and New Brunswick.

11.12 Domestic disappearance of specified dairy products, 1977 and 1978

Product	1977		1978	
	Total	Per capita	Total	Per capita
	<i>t</i>	<i>kg</i>	<i>t</i>	<i>kg</i>
Creamery butter	107 194	4.60	105 653	4.50
Cheddar cheese	76 618	3.28	79 211	3.37
Process cheese	63 979	2.74	69 971	2.98
Other cheese	72 249	3.06	76 516	3.26
Cottage cheese	25 891	1.11	26 236	1.12
Skim milk powder	81 616	3.50	21 959	0.93
	<i>kL</i>	<i>L</i>	<i>kL</i>	<i>L</i>
Evaporated whole milk	91 948	3.94	101 762	4.33
Partly skimmed evaporated whole milk 4%	517	0.02	336	0.01
Condensed whole milk	8 074	0.04	8 740	0.04
Yogourt	29 364	1.26	43 284	1.84
Ice cream, hard and soft	291 173	12.49	271 429	11.55

11.13 Estimated commercial production and farm value of fruit, 1975-78

Kind of fruit and year	Quantity/Weight		Kind of fruit and year	Quantity/Weight	
	<i>t</i>	Farm value \$'000		<i>t</i>	Farm value \$'000
Apples			Peaches		
1975	460 422	41,978	1975	59 201	15,555
1976 ^r	409 174	60,839	1976	49 008	15,989
1977	411 423	69,470	1977	42 794	13,994
1978	453 509	..	1978	42 855	..
Apricots			Pears		
1975	3 790	952	1975	38 218	6,428
1976	2 800	623	1976	29 279	3,388 ^r
1977	2 635	661	1977	38 617	6,793
1978	2 907	..	1978	36 746	..
Cherries (sour)			Plums and prunes		
1975	7 653	2,739	1975	10 528	2,577
1976	4 851	2,856	1976	6 366	1,428 ^r
1977	7 041	4,358	1977	7 228	2,020
1978	5 118	..	1978	7 640	..
Cherries (sweet)			Raspberries		
1975	12 525	5,855	1975	6 873	4,891
1976	8 722	2,831 ^r	1976	6 648	5,633
1977	10 135	5,132	1977	7 485	9,522
1978	8 401	..	1978	7 584	..
Strawberries			Grapes		
1975	16 590	13,649	1975	76 774	20,689
1976	18 311	15,851	1976	80 674	20,382
1977	20 205	18,836	1977	63 782	16,945
1978	23 546	..	1978	69 079	..
Cranberries			Blueberries		
1975	5 742	1,594	1975	14 390	8,178
1976	6 498	2,296	1976	11 312	8,649 ^r
1977	6 870	3,294	1977	15 861	19,049
1978	5 908	..	1978	13 676	..

11.14 Estimated commercial area and production of vegetables, 1976-78

Vegetables	1976 ^r		1977 ^r		1978	
	Area <i>ha</i>	Production <i>t</i>	Area <i>ha</i>	Production <i>t</i>	Area <i>ha</i>	Production <i>t</i>
Asparagus	1 658	2 637	1 419	2 571	1 428	2 533
Beans	7 576	36 230	9 380	46 535	9 681	..
Beets	940	19 009	933	19 614	950	18 725
Cabbage	4 172	105 236	4 038	112 463	4 591	..
Carrots	5 813	180 255	5 484	164 018	6 429	..
Cauliflower	1 250	17 751	1 236	17 317	1 536	26 531
Celery	515	25 923	461	23 118	533	28 841
Corn	30 657	263 495	25 884	243 039	25 340	225 090
Cucumbers	3 693	57 426	3 950	60 514	3 823	65 574
Lettuce	1 882	31 783	1 729	34 725	1 842	40 361
Onions	3 716	86 853	3 649	107 494	3 857	150 389
Parsnips	174	2 613	137	1 960	220	4 528
Peas	22 138	62 120	20 832	68 040	19 670	62 476
Rutabagas	3 409	103 503	3 216	93 456	3 375	..
Spinach	337	3 055	289	2 066	423	3 688
Tomatoes	11 526	408 218	11 599	453 306	12 260	465 544

11.15 Honey production, by province, and total value, 1975-78, with 10-year average for 1966-75 and 1967-76

Province		Average		1975	1976	1977 ^r	1978
		1966-75	1967-76				
Prince Edward Island	<i>t</i>	20	21	31	34	45	57
Nova Scotia	"	119	126	174	160	186	180
New Brunswick	"	66	71	88	98	91	97
Quebec	"	1 449	1 489	2 327	1 884	2 636	3 289
Ontario	"	3 583	3 447	3 915	3 269	3 606	3 963
Manitoba	"	3 760	3 904	3 654	5 479	5 180	6 863
Saskatchewan	"	3 239	3 364	2 946	4 028	4 062	5 182
Alberta	"	8 049	8 380	6 307	9 290	9 730	9 072
British Columbia	"	1 368	1 376	1 613	1 202	2 516	1 882
Total production	<i>t</i>	21 653	22 178	21 055	25 444	28 052	30 585
Total value	\$'000	13,473	15,170	22,965	25,085	30,943	38,065

11.16 Harvested area, yield, production and value of sugar beets, 1974-78

Year	Sugar beets		Total production <i>t</i>	Average price per <i>t</i> \$	Total farm value \$'000
	Harvested area <i>ha</i>	Yield per ha <i>kg</i>			
1974	27 336	27 495	751 596	55.47	41,690
1975 ^r	32 166	29 304	942 600	38.23	36,012
1976 ^r	33 100	35 423	1 172 500	33.28	39,025
1977	25 500	39 537	1 008 200	..	..
1978	24 900	38 012	946 500	..	..

11.17 Production and value of maple sugar and maple syrup, by province, 1975-79, with 5-year average for 1970-74

Province and year	Maple sugar		Maple syrup		Total value, sugar and syrup \$'000
	Quantity <i>kg</i>	Value \$'000	Quantity <i>kL</i>	Value \$'000	
Nova Scotia					
Av. 1970-74	6 000	14	20	39	53
1975	4 000	14	14	40	54
1976	2 000	9	18	55	64
1977	5 000	24	36	108	132
1978	8 000	37	23	74	111
1979	11 000	64	50	192	256
New Brunswick					
Av. 1970-74	9 000	23	37	73	96
1975	9 000	35	41	116	151
1976	12 000	50	41	120	170
1977	10 000	48	36	127	175
1978	6 000	32	23	82	114
1979	8 000	42	45	175	217
Quebec					
Av. 1970-74	123 000	243	7 523	10,476	10,719
1975	136 000	366	5 587	9,562	9,928
1976	159 000	486	7 283	13,985	14,471
1977	170 000	594	7 669	15,732	16,326
1978	134 000	506	6 296	15,470	15,976
1979	138 000	580	9 419	..	..
Ontario					
Av. 1970-74	7 000	21	706	1,256	1,277
1975	4 000	20	546	1,437	1,457
1976	6 000	33	605	1,741	1,774
1977	4 000	24	664	2,056	2,080
1978	5 000	32	650	2,138	2,170
1979	8 000	55	814	2,949	3,004
Total					
Av. 1970-74	145 000	301	8 286	11,844	12,145
1975	153 000	435	6 188	11,155	11,590
1976	179 000	578	7 947	15,901	16,479
1977	189 000	690	8 405	18,023	18,713
1978	153 000	607	6 992	17,764	18,371
1979	165 000	741	10 328	..	..

11.18 Production, and value of farm eggs, by province, 1977 and 1978

Province	1977 [†]				1978			
	Average number of layers '000	Average production per 100 layers No.	Egg production '000 doz	Total value (sold and used) \$ '000	Average number of layers '000	Average production per 100 layers No.	Egg production '000 doz	Total value (sold and used) \$ '000
Newfoundland	394	21,728	7,135	5,926	385	22,188	7,115	5,721
Prince Edward Island	151	20,912	2,625	1,950	151	21,007	2,645	1,939
Nova Scotia	942	22,328	17,531	13,505	882	22,214	16,330	12,383
New Brunswick	510	21,514	9,141	7,264	486	21,666	8,768	7,073
Quebec	3,928	22,979	75,200	55,622	3,782	23,423	73,800	54,598
Ontario	9,038	23,717	178,569	117,222	8,901	24,255	179,852	120,700
Manitoba	2,616	23,063	50,270	29,847	2,550	23,165	49,275	29,421
Saskatchewan	1,192	19,647	19,522	13,589	1,257	19,910	20,851	14,475
Alberta	2,289	21,187	40,403	28,095	2,270	22,027	41,646	29,383
British Columbia	2,788	25,046	58,187	40,318	2,717	25,683	58,161	41,447
Total	23,848	22,212	458,583	313,338	23,381	22,554	458,443	317,140

11.19 Harvested area, production and value of the commercial crop of leaf tobacco, by province, 1975-77

Year	Quebec			Ontario			Other provinces		
	Harvested area ha	Production t	Value \$ '000	Harvested area ha	Production t	Value \$ '000	Harvested area ha	Production t	Value \$ '000
1975	3 749	6 705	13 072	36 182	96 553	199,724	1 679	2 795	5,701
1976	3 753	4 909	10,312	1	73 657	165,194	1 758	2 930	6,492
1977	3 624	6 623	14,953	1	94 957	227,584	1 886	2 693	5,960

[†]Commencing with the 1976 crop year, producers of flue-cured tobacco in Ontario changed from an area harvested basis to weight delivered formula; thus these data are no longer available.

11.20 Harvested area, production and value of the commercial crop of leaf tobacco, by main type, 1975-77

Type of tobacco and year		Harvested area ha	Average yield per ha kg	Total production t	Average farm price kg \$	Gross farm value \$ '000
Flue-cured	1975	40 262	2 571	103 523	2,069	214,182
	1976	1	1	79 214	2,246	177,908
	1977	1	1	101 202	2,405	243,438
Burley	1975	463	2 259	1 046	1,790	1,872
	1976	526	2 148	1 130	1,862	2,104
	1977	492	2 665	1 311	1,532	2,008
Cigar leaf	1975	556	1 644	914	1,531	1,399
	1976	574	1 202	690	1,617	1,116
	1977	557	1 772	987	1,598	1,557
Total*	1975	41 611	2 549	106 053	2 060	218,497
	1976	1	1	81 496	2,233	181,998
	1977	1	1	104 273	2,383	248,497

[†]Commencing with the 1976 crop year, producers of flue-cured tobacco in Ontario changed from an area harvested basis to weight delivered formula; thus these data are no longer available.

*Includes other types not specified.

11.21 Production and disposition of tobacco products, 1976-78

Item and year		Total production	Sales		
			In Canada ¹	Ship/air stores embassies/Canada ²	For export — bulk shipments, including Canadian mission abroad ³
Cigarettes ('000)	1976	61,559,245	60,744,885	249,494	658,977
	1977	65,530,503	62,787,571	205,090	759,835
	1978	62,069,546	61,610,013	343,950	681,124
Cigars ('000)	1976	560,397	507,445	1,819	5,306
	1977	459,764	465,906	2,585	7,800
	1978	448,484	439,493	3,228	7,926
Manufactured tobacco Fine cut ⁴ (kg)	1976	6 774 553	6 582 420	419	8 105
	1977	6 500 039	6 316 200	1 479	8 140
	1978	5 717 219	5 659 927	259	6 767
Pipe tobacco ⁴ (kg)	1976	408 971	390 559	556	14 884
	1977	282 439	304 497	368	6 087
	1978	292 640	285 699	828	4 534
Other ⁵ (kg)	1976	586 020	534 787	9	—
	1977	570 529	560 759	—	—
	1978	565 880	570 249	—	—

¹Includes samples and goods invoiced to wholesalers, retailers, and institutions which are subject to excise duty, less returned goods credited to same.

²Excise duty exempt.

³Includes tobacco, intended for cigarettes.

⁴Includes tobacco, intended for pipe smoking.

⁵Other tobacco, plug, snuff, chewing and twist.

11.22 Average index¹ of farm prices of agricultural products, by province, 1973-78 (1971 = 100)

Province	1973 [†]	1974 [†]	1975 [†]	1976 [†]	1977 [†]	1978
Prince Edward Island	210.5	230.1	209.0	247.3	220.5	223.4
Nova Scotia	148.6	172.0	178.9	188.7	194.0	210.5
New Brunswick	201.4	227.8	196.3	256.7	236.2	239.5
Quebec	144.7	165.5	185.1	183.5	186.7	208.5
Ontario	148.2	163.7	174.5	174.7	178.6	201.1
Manitoba	193.4	234.6	227.5	211.1	200.0	217.0
Saskatchewan	204.3	273.8	248.2	220.2	201.6	205.8
Alberta	185.6	226.6	216.0	199.8	190.8	213.6
British Columbia	141.2	168.1	169.3	172.6	175.9	191.6
Total	170.4	205.5	203.5	194.6	189.6	206.9

¹A description of this index, its coverage and the methods used can be obtained from Agriculture Division, Statistics Canada. Monthly index numbers of farm prices are published in *Index numbers of farm prices of agricultural products* (Catalogue 62-003).

11.23 Average cash prices a metric tonne of major Canadian grains, crop years ended July 31, 1975-79 (basis, in store Thunder Bay)

Year	Averages in dollars per tonne					
	Wheat ¹ 1 C.W. Red Spring 13.5%	Oats ¹ 2 C.W.	Barley ¹ 2 C.W. — Six-Row	Rye ² 2 C.W.	Flaxseed ² 1 C.W.	Rapeseed ² 1 Canada
1975	193.41	121.90	162.99	103.14	375.67	318.90
1976 [†]	172.10	121.64	151.15	105.35	274.12	226.77
1977 [†]	123.86	109.13	141.97	94.88	276.01	288.93
1978	137.20	103.88	110.92	101.22	225.97	295.90 ³
1979	177.32	108.11	131.00	106.18	303.72	316.03

¹Canadian Wheat Board daily fixed prices.

²Winnipeg Commodity Exchange daily closing cash quotations.

³As of April 1978, basis in store Vancouver.

11.24 Weighted average prices per 100 kg of Canadian livestock at public stockyards, 1964-78 (dollars)

Item	Average prices						
	1964-73	1969-73	1974	1975	1976	1977	1978
Toronto							
A1.2 steers over 454 kg	69.45	79.98	108.84	103.60	92.35	98.10	136.84
D1.2 cows	48.83	57.19	63.25	50.77	57.43	59.28	91.60
Feeder steers over 363 kg	69.20	82.01	98.00	87.10	87.70	92.99	138.58
Choice and good veal calves	85.34	96.92	113.56	85.12	92.11	91.40	150.07
Index 100 hogs, dressed	76.26	81.90	110.87	148.19	141.32	134.41	153.88
Good lambs	68.01	77.03	107.23	129.06	117.77	137.17	174.45
Winnipeg							
A1.2 steers over 454 kg	66.82	77.12	107.50	96.56	86.53	87.94	127.89
D1.2 cows	48.63	58.20	59.79	46.89	50.53	55.34	88.03
Feeder steers over 363 kg	67.51	81.26	89.55	77.98	79.41	83.02	129.34
Choice and good veal calves	94.18	112.70	154.98	97.53	103.70	97.82	163.23
Index 100 hogs, dressed	70.79	76.19	101.68	137.90	130.14	125.18	149.54
Good lambs	58.14	67.48	99.08	125.16	88.67	102.65	145.81
Calgary							
A1.2 steers over 454 kg	65.06	75.33	105.65	96.03	86.42	87.17	126.87
D1.2 cows	46.16	55.49	57.45	46.96	50.51	55.09	88.78
Feeder steers over 363 kg	66.62	80.18	96.01	84.77	80.16	87.15	138.89
Choice and good veal calves	75.53	94.93	66.34	59.79	60.14	83.40	157.63
Index 100 hogs, dressed	67.00	72.18	100.35	144.20	133.51	115.19	—
Good lambs	52.76	59.35	81.35	88.07	—	—	—
Edmonton							
A1.2 steers over 454 kg	64.07	74.30	100.75	91.07	82.12	84.17	124.38
D1.2 cows	44.33	53.20	52.03	41.78	46.01	50.66	85.38
Feeder steers over 363 kg	66.71	80.67	91.12	81.13	78.70	84.50	139.95
Choice and good veal calves	79.68	99.60	73.28	63.69	69.44	87.10	162.57
Index 100 hogs, dressed	67.11	72.69	98.90	143.21	131.99	126.65	148.83
Good lambs	52.23	59.15	80.93	89.07	86.77	104.37	144.66

11.25 Per capita supplies of food moving into consumption 1976 and 1977 with average for 1971-75

Kind of food and weight base	kg per capita per annum		
	Average 1971-75	1976 ^a	1977
CEREALS			
Wheat flour	retail wt 64.49	71.18	69.93
Rye flour	" 59.19	61.69	59.88
Oatmeal and rolled oats	" 0.39	0.41	0.43
Pot and pearl barley	" 1.50	1.56	1.48
Corn flour and meal	" 0.05	"	"
Buckwheat flour	" 2.21	"	"
Rice	" 0.01	"	"
Breakfast food	" 2.69	2.64	2.69
	" 3.46	2.82	3.12
SUGARS AND SYRUPS			
Sugar	sugar content 47.45	43.27	43.46
Maple sugar	retail wt 44.47	42.05	42.30
Honey	" 0.21	0.18	0.19
Other	" 0.79	0.85	0.89
	" 2.94	0.53	0.40
PULSES AND NUTS			
Dry beans	retail wt 6.23	4.62	"
Baked canned beans	" 1.62	0.32	"
Dry peas	"	"	"
Peanuts	" 0.95	0.63	0.34
Tree nuts	" 2.82	2.67	2.34
	" 0.84	1.00	0.93
OILS AND FATS			
Margarine	fat content 19.58	20.42	20.35
Shortening and shortening oils	retail wt 4.63	5.51	5.86
Salad oils	" 7.58	7.77	7.60
Butter	" 3.18	4.10	4.35
	" 6.27	5.08	4.54
FRUIT			
Fresh	fresh equiv. 122.63	139.36	134.26
Canned	retail wt 55.32	65.49	62.47
Frozen	net wt canned 13.04	13.29	11.50
Juice	retail wt 1.35	1.21	1.23
Tomatoes, fresh	net wt canned 18.05	20.65	22.76
canned	retail wt 5.18	5.36	5.21
Tomato juice	net wt canned 2.91	3.16	2.89
pulp, paste and purée	" 3.86	3.71	4.77
ketchup	" 1.18	"	"
	" 2.10	"	"
Citrus fruit, fresh	retail wt 13.56	17.97	18.29
juice	net wt canned 8.12	10.22	10.41
Apples, fresh	retail wt 11.20	13.40	11.16
canned	net wt canned 0.12	0.02	0.07
juice	" 2.74	3.71	4.85
frozen	retail wt 0.14	0.16	0.16
sauce	net wt canned 0.59	0.51	0.61
pie filling	" 0.21	0.33	0.27

11.25 Per capita supplies of food moving into consumption 1976 and 1977 with average for 1971-75 (continued)

Kind of food and weight base		kg per capita per annum		
		Average 1971-75	1976 ^a	1977
FRUIT (concluded)				
Apricots, fresh	<i>retail wt</i>	0.11	0.10	0.08
canned	<i>net wt canned</i>	0.18	0.11	0.13
Bananas, fresh	<i>retail wt</i>	9.31	10.36	9.91
Blueberries, fresh	"	0.24	0.09	0.16
canned	<i>net wt canned</i>	"	"	"
frozen	<i>retail wt</i>	"	0.01	0.05
Cherries, fresh	"	0.60	0.66	0.59
canned	<i>net wt canned</i>	0.12	"	"
frozen	<i>retail wt</i>	0.25	0.19	0.20
Cranberries, fresh	"	0.28	0.36	0.36
Melons, fresh	"	3.63	3.85	3.60
Peaches, fresh	"	2.32	2.41	2.15
canned	<i>net wt canned</i>	1.61	1.30	1.46
Pears, fresh	<i>retail wt</i>	1.72	1.85	1.96
canned	<i>net wt canned</i>	0.84	0.72	0.73
Pineapples, fresh	<i>retail wt</i>	0.21	0.32	0.33
canned	<i>net wt canned</i>	"	1.08	0.89
juice	"	0.42	0.36	0.42
Plums, fresh	<i>retail wt</i>	0.91	0.99	1.13
canned	<i>net wt canned</i>	0.12	0.08	0.07
Raspberries, fresh	<i>retail wt</i>	"	0.02	0.02
canned	<i>net wt canned</i>	0.03	0.03	0.02
frozen	<i>retail wt</i>	0.22	0.19	0.24
Strawberries, fresh	"	0.87	1.12	1.20
canned	<i>net wt canned</i>	0.04	0.03	0.04
frozen	<i>retail wt</i>	0.66	0.59	0.58
Grapes, fresh	"	4.88	5.74	5.22
Unspecified, fresh	"	"	"	"
canned	<i>net wt canned</i>	1.79	1.22	"
frozen	<i>retail wt</i>	"	"	"
juice	<i>net wt canned</i>	2.51	2.46	2.09
jams, jellies, marmalade	<i>processed wt</i>	2.09	2.44	1.84
VEGETABLES ¹				
Fresh	<i>fresh equiv.</i>	53.96	58.01	57.65
Canned	<i>retail wt</i>	36.52	45.98	44.12
Frozen	<i>net wt canned</i>	8.34	6.07	6.79
Cabbage, fresh	<i>retail wt</i>	2.86	2.56	2.80
Lettuce	"	4.96	6.59	6.19
Spinach, fresh	"	7.05	8.93	9.08
Carrots, fresh	"	0.27	0.35	0.36
canned	<i>net wt canned</i>	6.40	7.37	6.40
frozen	<i>retail wt</i>	0.47	0.20	0.32
Beans, fresh	"	0.38	0.44	0.50
canned	<i>net wt canned</i>	0.51	0.55	0.56
frozen	<i>retail wt</i>	1.64	1.32	1.43
Peas, fresh	<i>net wt canned</i>	0.36	0.33	0.44
canned	<i>retail wt</i>	0.10	0.04	0.06
frozen	"	2.09	1.52	1.82
Beets, fresh	<i>net wt canned</i>	1.10	1.09	1.08
canned	<i>retail wt</i>	0.19	0.34	0.48
Cauliflower, fresh	<i>net wt canned</i>	0.34	0.32	0.32
Celery, fresh	<i>retail wt</i>	0.86	1.13	1.07
Corn, fresh	"	3.32	3.87	3.60
canned	"	1.58	2.13	2.00
frozen	<i>net wt canned</i>	2.33	1.84	2.11
Cucumbers, fresh	<i>retail wt</i>	0.31	0.18	0.28
Onions, not processed	"	1.25	1.77	1.61
Asparagus, fresh	"	5.58	6.28	6.23
canned	<i>net wt canned</i>	0.20	0.02	0.04
frozen	<i>retail wt</i>	0.22	0.24	0.23
Rutabagas, fresh	"	"	"	0.02
Broccoli, fresh	"	1.98	2.54	2.14
frozen	"	0.44	0.69	0.79
Brussels sprouts, fresh	"	0.12	0.14	0.15
canned	"	"	0.07	0.09
frozen	"	0.08	0.10	0.10
Unspecified, fresh	"	0.63	1.25	1.38
canned	<i>net wt canned</i>	1.18	0.51	0.45
frozen	<i>retail wt</i>	0.39	0.09	"
MUSHROOMS				
Fresh	<i>fresh equiv.</i>	1.49	1.29	1.66
Canned	<i>retail wt</i>	0.47	0.58	0.64
"	<i>net wt canned</i>	0.85	0.85	1.23
POTATOES				
White	<i>fresh equiv.</i>	70.59	67.16	71.11
Sweet	"	70.33	66.76	70.78
"	"	0.26	0.40	0.33
MEAT				
Pork	<i>carcass wt</i>	74.38	80.30	77.74
Beef	"	26.81	24.12	24.19
Veal	"	42.49	51.35	49.01
Mutton and lamb	"	1.80	2.16	2.09
Offal	"	1.55	0.96	0.81
Canned meat ²	"	1.73	1.71	1.64
"	<i>net wt canned</i>	"	0.45	0.36
EGGS				
"	<i>fresh equiv.</i>	13.47	13.03	12.64

11.25 Per capita supplies of food moving into consumption 1976 and 1977 with average for 1971-75 (concluded)

Kind of food and weight base		kg per capita per annum		
		Average 1971-75	1976 ^f	1977
POULTRY^a				
Chicken	<i>eviscerated wt</i>	20.39	20.27	20.62
Fowl	"	14.03	14.62	15.24
Turkey	"	1.47	1.20	1.21
Duck	"	4.62	4.17	4.17
Goose	"	0.19	0.23	..
	"	0.07	0.05	..
FISH				
Fish and shellfish	<i>edible wt</i>	5.66	7.30	7.70
fresh and frozen ⁴	"	3.38	5.20	4.80
Fish, cured (smoked, salted, pickled)	"	0.34	0.20	0.20
Fish and shellfish, canned	"	1.95	1.90	2.70
MILK AND CHEESE				
Cheddar cheese	<i>milk solids</i>	30.60	..	..
Process cheese	<i>retail wt</i>	2.32	1.66	1.47
Other cheese	"	2.43	2.69	2.74
Cottage cheese	"	2.22	2.78	2.97
Evaporated whole milk	"	1.03	1.07	1.11
Condensed whole milk	"	4.83	3.96	4.21
Powdered whole milk	"	0.36	0.30	0.37
Other whole milk products ⁵	"	0.04	0.05	0.12
Powdered skim milk ⁶	"	0.15	0.56	0.84
buttermilk	"	2.42	2.83	3.41
whey	"	0.15	0.12	0.16
Miscellaneous byproducts ⁷	"	1.11	1.68	1.98
Fluid milk production	"	0.77	0.31	0.48
Ice milk	"	121.25	118.48	118.09
	"	18.33	0.61	0.65
BEVERAGES				
Tea	<i>tea leaf equiv.</i>	1.12	1.14	1.17
Coffee	<i>green beans</i>	4.18	4.40	3.51
Cocoa	"	1.58	1.42	1.31

¹Includes pickles, relishes, vegetables used in soups.

²Per capita consumption not comparable with previous years.

³Excludes Newfoundland.

⁴Excludes herring, fresh and frozen, and all fish used for bait.

⁵Includes formula milks, whole milk powder of less than 26% fat, concentrated liquid milk and whole milk powder.

⁶Part of this product is used for animal feeds.

⁷Includes sugar of milk (lactose), special formula skim milk products, concentrated liquid skim milk and casein.

11.26 Supply, distribution and disappearance of meats, 1971 and 1975-78

Item		1971 ¹	1975 ¹	1976 ¹	1977	1978
BEEF						
Animals slaughtered	'000	3,343.1	4,237.7	4,476.3	4,086.6	3,987.9
Estimated dressed weight	t	844 138	1 034 746	1 111 907	1 095 102	1 022 795
On hand, Jan. 1	"	19 719	20 040	22 560	35 146	25 586
Imports for consumption	"	68 389	90 960	141 370	86 950	97 285
Total supply	"	932 246	1 145 746	1 275 837	1 217 198	1 145 666
Exports	"	48 595	20 151	58 267	50 718	44 218
On hand, Dec. 31	"	16 042	22 560	35 146	25 586	26 367
Domestic disappearance	"	867 609	1 103 035	1 182 424	1 140 894	1 075 081
Per capita disappearance	kg	40.2	48.5	51.4	48.9	45.8
VEAL						
Animals slaughtered	'000	811.0	962.8	943.7	934.5	736.1
Estimated dressed weight	t	44 553	52 938	50 456	47 807	37 338
On hand, Jan. 1	"	2 411	1 565	1 521	2 154	1 393
Imports for consumption	"	1 156	1 211	1 872	2 232	4 747
Total supply	"	48 120	55 714	53 849	52 193	43 478
Exports	"	3 083	135	306	317	399
On hand, Dec. 31	"	1 527	1 521	2 154	1 393	1 632
Domestic disappearance	"	43 510	54 058	51 389	50 483	41 447
Per capita disappearance	kg	2.0	2.4	2.2	2.2	1.8
MUTTON AND LAMB						
Animals slaughtered	'000	406.3	401.6	387.7	285.9	221.1
Estimated dressed weight	t	7 929	7 781	7 472	5 407	4 284
On hand, Jan. 1	"	5 107	3 091	2 007	2 491	2 445
Imports for consumption	"	23 764	22 517	15 212	13 574	16 546
Total supply	"	36 800	33 389	24 691	21 472	23 275
Exports	"	43	85	142	52	36
On hand, Dec. 31	"	5 020	2 007	2 491	2 445	3 391
Domestic disappearance	"	31 737	31 297	22 058	18 975	19 848
Per capita disappearance	kg	1.5	1.4	1.0	0.8	0.8

11.26 Supply, distribution and disappearance of meats, 1971 and 1975-78 (concluded)

Item	1971 ¹	1975 ¹	1976 ¹	1977	1978
PORK					
Animals slaughtered	'000 11,351.8	9,164.4	8,969.2	9,076.8	10,026.6
Estimated dressed weight ²	t 673 603	542 330	532 834	538 932	619 600
On hand, Jan. 1	" 12 192	10 384	7 850	12 492	9 833
Imports for consumption	" 8 248	45 265	88 938	91 521	54 239
Total supply	" 694 079	597 979	629 622	642 945	683 672
Exports	" 44 558	40 681	39 176	46 006	56 301
On hand, Dec. 31	" 13 140	7 850	12 492	9 833	11 720
Domestic disappearance	" 636 381	549 448	577 954	587 106	615 651
Per capita disappearance	kg 29.5	24.2	25.1	25.2	26.2
OFFAL					
Estimated production	t 58 992	62 508	64 390	63 860	61 830
On hand, Jan. 1	" 3 657	4 233	4 423	4 800	5 579
Imports for consumption	" 4 052	2 974	2 883	3 774	5 204
Total supply	" 66 701	69 715	71 696	72 434	72 613
Exports	" 20 646	26 987	27 582	28 582	39 543
On hand, Dec. 31	" 4 099	4 423	4 800	5 579	4 513
Domestic disappearance	" 41 956	38 305	39 314	38 266	28 557
Per capita disappearance	kg 1.9	1.7	1.7	1.6	1.2

¹Intercensal revisions.
²Trimmed of larding fat.

11.27 Number of census-farms, by province, censuses 1971¹ and 1976

Province or territory	1971	1976
Newfoundland	402	398
Prince Edward Island	3,462	3,054
Nova Scotia	3,534	3,441
New Brunswick	3,486	3,244
Quebec	48,207	43,097
Ontario	75,645	76,983
Manitoba	29,585	29,963
Saskatchewan	71,319	69,578
Alberta	53,205	57,310
British Columbia	11,014	13,033
Yukon and Northwest Territories	9	17
Canada	299,868	300,118

¹Based on 1976 census-farm definition.

11.28 Use of agricultural land, by province, censuses 1971¹ and 1976 (hectares)

	Newfoundland		Prince Edward Island		Nova Scotia	
	1971	1976	1971	1976	1971	1976
Improved land	6 112	9 755	179 540	194 147	130 497	147 853
Under crops ²	2 705	3 518	130 405	151 841	83 739	100 068
Pasture (improved)	2 689	5 488	39 911	36 367	36 231	37 217
Summerfallow	166	128	3 222	2 192	2 132	2 647
Other	553	621	6 001	3 747	8 393	7 921
Unimproved land	15 042	19 668	90 713	83 902	277 566	252 396
Woodland	3 315	6 800	70 022	68 529	222 828	206 150
Other	11 727	12 868	20 690	15 373	54 737	46 246
Total	21 155	29 423	270 253	278 050	408 062	400 249
	New Brunswick		Quebec		Ontario	
	1971	1976	1971	1976	1971	1976
Improved land	165 711	171 844	2 292 925	2 245 347	4 043 807	4 333 292
Under crops ²	113 465	126 546	1 566 883	1 737 809	2 971 846	3 414 815
Pasture (improved)	37 919	36 225	600 894	439 488	844 808	710 235
Summerfallow	2 949	1 636	27 757	18 235	81 752	69 327
Other	11 378	7 437	97 391	49 816	145 401	138 916
Unimproved land	259 827	230 484	1 447 507	1 408 787	1 698 877	1 633 523
Woodland	209 553	190 311	1 041 715	1 021 485	775 287	760 984
Other	50 275	40 173	405 792	387 301	923 590	872 540
Total	425 539	402 328	3 740 432	3 654 134	5 742 684	5 966 816
	Manitoba		Saskatchewan		Alberta	
	1971	1976	1971	1976	1971	1976
Improved land	4 982 862	5 181 499	18 462 689	18 895 957	11 085 839	11 790 925
Under crops ²	3 565 502	3 829 500	10 876 547	10 589 287	7 056 627	7 614 120
Pasture (improved)	277 492	307 067	778 557	900 779	1 062 955	1 310 083
Summerfallow	1 031 155	925 666	6 586 578	7 176 505	2 740 527	2 610 729
Other	108 713	119 266	221 007	229 385	225 730	255 992
Unimproved land	2 315 522	2 429 496	7 337 359	7 536 671	8 049 842	8 249 057
Woodland	343 181	362 881	374 228	407 091	558 355	683 094
Other	1 972 340	2 066 615	6 963 131	7 129 580	7 491 487	7 565 962
Total	7 298 384	7 610 995	25 800 048	26 432 628	19 135 682	20 039 981

11.28 Use of agricultural land, by province, censuses 1971¹ and 1976 (hectares) (concluded)

	British Columbia		Yukon and Northwest Territories		Canada	
	1971	1976	1971	1976	1971	1976
Improved land	627 887	736 237	490	576	41 978 362	43 707 432
Under crops ²	398 260	473 803	88	460	26 766 069	28 041 767
Pasture (improved)	139 207	161 543	382	65	3 821 046	3 944 558
Summerfallow	62 243	66 296	13	21	10 538 495	10 873 382
Other	28 177	34 594	7	30	852 751	847 724
Unimproved land	1 464 465	1 615 566	195	1 220	22 956 914	23 460 771
Woodland	278 617	275 166	—	18	3 877 101	3 982 510
Other	1 185 849	1 340 400	195	1 202	19 079 813	19 478 261
Total	2 092 353	2 351 802	685	1 796	64 935 275	67 168 202

¹Based on 1976 census-farm definition.²Includes field, vegetable, fruit and nursery cropland.

11.29 Economic classification of census-farms¹, by province, censuses 1971 and 1976 (number)

Economic class	Province or territory					
	Newfoundland		Prince Edward Island		Nova Scotia	
	1971	1976	1971	1976	1971	1976
Value of products sold of						
\$100,000 or over		42		149		244
75,000-\$99,999		13		92		106
50,000- 74,999	24	23	115	132	213	189
35,000- 49,999		15		170		207
25,000- 34,999	11	14	88	197	122	179
15,000- 24,999	33	28	133	368	161	250
10,000- 14,999	38	30	288	359	383	244
5,000- 9,999	38	55	385	543	321	480
2,500- 4,999	57	53	909	514	621	620
1,200- 2,499	81	95	862	523	747	907
Institutional farms	95	30	674	7	946	15
Total	402	398	3,462	3,054	3,534	3,441
	New Brunswick		Quebec		Ontario	
	1971	1976	1971	1976	1971	1976
Value of products sold of						
\$100,000 or over		147		953		4,517
75,000-\$99,999		100		732		3,189
50,000- 74,999	138	171	902	2,268	4,603	6,649
35,000- 49,999		195		3,907		6,746
25,000- 34,999	132	208	837	5,266	4,041	6,563
15,000- 24,999	180	309	1,625	5,094	5,698	8,953
10,000- 14,999	344	261	5,094	5,268	11,532	7,431
5,000- 9,999	366	501	6,898	6,252	9,950	11,524
2,500- 4,999	657	597	14,257	5,184	16,527	12,041
1,200- 2,499	786	738	11,319	5,752	13,316	9,289
Institutional farms	865	17	7,172	75	9,894	81
Total	18	3,486	103	43,097	84	76,983
	Manitoba		Saskatchewan		Alberta	
	1971	1976	1971	1976	1971	1976
Value of products sold of						
\$100,000 or over		973		1,695		2,692
75,000-\$99,999		731		2,050		1,743
50,000- 74,999	606	1,980	737	6,020	2,236	3,989
35,000- 49,999		2,533		8,310		4,598
25,000- 34,999	531	3,344	895	9,989	1,797	5,633
15,000- 24,999	926	5,277	1,919	13,745	2,657	8,631
10,000- 14,999	3,138	3,887	7,556	9,497	7,292	7,220
5,000- 9,999	4,263	4,912	11,496	9,586	14,246	9,892
2,500- 4,999	8,984	3,628	23,840	5,366	10,298	7,499
1,200- 2,499	6,888	2,646	16,487	3,036	6,494	5,242
Institutional farms	4,212	52	8,122	284	178	171
Total	37	29,585	267	69,578	53,205	57,310
	British Columbia		Yukon and Northwest Territories		Canada	
	1971	1976	1971	1976	1971	1976
Value of products sold of						
\$100,000 or over		937		—		12,349
75,000-\$99,999		433		—		9,189
50,000- 74,999	869	681	—	—	10,443	22,120
35,000- 49,999		624		1		27,288
25,000- 34,999	572	628		—		32,021
15,000- 24,999	728	1,128		—	9,026	46,129
10,000- 14,999	1,204	1,166		—	14,060	35,363
5,000- 9,999	1,070	2,044		2	42,794	45,791
2,500- 4,999	2,015	2,369	—	3	82,113	37,874
1,200- 2,499	2,167	2,985	3	10	62,954	31,223
Institutional farms	2,353	38	6	1	40,833	771
Total	36	11,014	—	17	299,868	300,118

¹Based on 1976 census-farm definition; farms with sales of \$1,200 or over.

11.30 Census-farms with sales of \$2,500 or more, classified by type of farm and by province, Census 1976 (number)

Type of farm	Province or territory					
	Nfld.	PEI	NS	NB	Que.	Ont.
Dairy	60	846	912	838	24,072	15,617
Cattle	12	334	518	333	2,511	18,343
Hogs	17	216	151	95	2,728	4,461
Poultry	46	19	134	103	1,103	1,655
Wheat	—	13	4	11	143	975
Small grains (excl. wheat farms)	—	126	40	65	1,674	13,443
Field crops, other than small grains	47	471	83	662	1,053	1,782
Fruits and vegetables	42	30	355	164	1,811	3,595
Miscellaneous specialty	15	21	155	66	884	2,437
Mixed	34	448	167	152	1,291	5,305
Livestock combination	2	319	80	80	459	3,658
Field crops combination	—	77	3	15	127	169
Other combinations	32	52	84	57	705	1,478
Total	273	2,524	2,519	2,489	37,270	67,613
	Canada					
	Man.	Sask.	Alta.	BC	YT and NWT	
Dairy	1,639	570	1,933	1,437	—	47,924
Cattle	5,186	7,713	19,505	3,136	1	57,592
Hogs	821	501	1,176	116	—	10,282
Poultry	285	116	307	564	—	4,332
Wheat	7,407	43,817	8,500	206	—	61,076
Small grains (excl. wheat farms)	9,127	10,213	14,719	870	—	50,277
Field crops, other than small grains	275	44	524	220	2	5,163
Fruits and vegetables	64	25	37	2,153	—	8,276
Miscellaneous specialty	274	173	662	813	1	5,501
Mixed	2,187	3,086	4,534	495	2	17,701
Livestock combination	1,465	1,954	3,105	185	—	11,307
Field crops combination	160	24	365	65	—	1,005
Other combinations	562	1,108	1,064	245	2	5,389
Total	27,265	66,258	51,897	10,010	6	268,124

11.31 Lake shipments of Canadian grain from Thunder Bay, navigation seasons 1977 and 1978 (tonnes)

Year and item	To Canadian ports	To US ports	To overseas ports	Total shipments
1977				
Wheat	9 353 980	22 861	219 510	9 596 351
Oats	316 835	—	195 981	512 816
Barley	1 915 044	58 520	138 395	2 111 959
Rye	29 009	3 030	57 748	89 787
Flaxseed	37 309	—	181 904	219 213
Rapeseed	—	—	163 386	163 386
Total	11 652 177	84 411	956 924	12 693 512
1978				
Wheat	9 565 364	—	119 176	9 684 540
Oats	251 813	—	254 261	506 074
Barley	2 217 160	51 917	2 614 808	4 883 885
Rye	12 306	—	92 205	104 511
Flaxseed	38 793	—	272 788	311 581
Rapeseed	—	—	129 232	129 232
Total	12 085 436	51 917	3 482 470	15 619 823

11.32 Supply and disposition of Canadian grain, crop years ended July 31, 1978 and 1979 (thousand tonnes)

Item	Wheat	Oats	Barley	Rye	Flaxseed	Rapeseed
CROP YEAR 1977-78						
Carryover, Aug. 1, 1977	13 319.5	1 327.6	3 218.1	341.6	212.3	199.3
Production in 1977	19 861.6	4 303.0	11 798.5	406.5	652.8	1 973.1
Imports	—	—	—	—	—	—
Total, supply	33 181.1	5 630.6	15 016.6	748.1	865.1	2 172.4
Exports ¹	15 998.3	90.4	3 589.6	270.7	263.1	1 014.0
Domestic use ²	5 068.1	3 856.9	6 219.1	202.2	130.4	832.7
Total, disposition	33 181.1	5 630.6	15 016.6	748.1	865.1	2 172.4
Carryover, July 31, 1978	12 114.7	1 683.3	5 207.9	275.2	471.6	325.7

11.32 Supply and disposition of Canadian grain, crop years ended July 31, 1978 and 1979 (thousand tonnes) (concluded)

Item	Wheat	Oats	Barley	Rye	Flaxseed	Rapeseed
CROP YEAR 1978-79						
Carryover, Aug. 1, 1978	12 114.7	1 683.3	5 207.9	275.2	471.6	325.7
Production in 1978	21 145.3	3 620.5	10 387.4	605.4	571.5	3 497.1
Imports	—	23.5	—	—	—	—
Total, supply	33 260.0	5 327.3	15 595.3	880.6	1 043.1	3 822.8
Exports ¹	13 048.6	16.8	3 862.3	154.0	493.5	1 720.7
Domestic use ²	5 137.5	3 790.1	6 837.4	223.9	178.3	1 034.5
Total, disposition	33 260.0	5 327.3	15 595.3	880.6	1 043.1	3 822.8
Carryover, July 31, 1979	15 073.9	1 520.4	4 895.6	502.7	371.3	1 067.6

¹Includes seed wheat, wheat flour in terms of wheat; seed oats, rolled oats and oatmeal in terms of oats; and malt in terms of barley.
²Includes human food, seed requirements, industrial use, loss in handling and animal feed.

11.33 Licensed grain storage capacity and grain in store, crop year 1977-78

Grain storage position	Licensed storage capacity	Canadian grain ¹ in licensed storage			Proportion of licensed storage capacity occupied		
	Aug. 1, 1977 '000 t	July 31, 1977 '000 t	Mar. 29, 1978 '000 t	July 31, 1978 '000 t	July 31, 1977 %	Mar. 31, 1978 %	July 31, 1978 %
Primary elevators	9 316	4 395	5 546	6 430	47.2	59.5	69.0
Process elevators	577	205	198	191	35.5	34.3	33.1
Terminal	3 654	38	75	107	1.0	2.1	2.9
Other	3 426	3 298	3 195	2 463	96.3	93.3	71.9
Total	16 974	7 936	9 014	9 191	46.8	53.1	54.2

¹Wheat, oats, barley, rye, flaxseed and rapeseed.

11.34 Wheat milled for flour, and production and exports of wheat flour, 10-year average 1969-78 and crop years ended July 31, 1975-78

Crop year		Wheat milled for flour '000 t	Wheat flour production '000 t	Wheat flour exports	
				Amount '000 t	Production %
Av. 1968-69 — 1977-78		2 434	1 788	472	26.4
1974-75		2 419	1 770	370	20.9
1975-76		2 550	1 840	469	25.5
1976-77		2 523	1 864	506 ^r	27.1 ^r
1977-78		2 638	1 964	545	27.7

11.35 Selected farm machinery, by province, censuses 1971¹ and 1976 (number)

Type of machine		Province or territory					
		Nfld.	PEI	NS	NB	Que.	Ont.
Automobiles	1971	205	3,329	2,813	2,994	40,733	80,901
	1976	255	3,293	3,013	2,925	39,838	86,380
Motor trucks	1971	387	2,695	3,393	3,256	18,112	59,293
	1976	411	3,369	3,916	3,991	21,713	73,374
Tractors	1971	328	5,046	4,959	5,345	71,463	148,057
	1976	429	5,366	5,631	5,862	80,017	165,623
Grain combines	1971	—	1,180	292	776	5,373	23,787
	1976	1	1,248	310	759	5,925	24,914
Swathers	1971	6	92	71	111	3,583	7,505
	1976	6	121	170	263	6,719	11,598
Pick-up hay balers	1971	63	1,816	1,913	1,978	29,746	36,089
	1976	108	1,834	2,005	1,953	30,012	37,481
Forage crop harvesters	1971	8	143	278	199	4,708	12,768
	1976	13	353	368	324	5,979	15,674

11.35 Selected farm machinery, by province, censuses 1971¹ and 1976 (number) (concluded)

Type of machine		Province or territory					
		Man.	Sask.	Alta.	BC	YT and NWT	Canada
Automobiles	1971	28,212	59,980	46,032	11,080	1	276,280
	1976	28,895	61,365	52,205	13,042	12	291,223
Motor trucks	1971	37,918	112,861	86,193	12,504	14	336,626
	1976	48,323	140,684	109,694	17,106	17	422,598
Tractors	1971	58,710	127,466	101,914	17,114	12	540,414
	1976	65,176	139,487	116,316	21,352	25	605,284
Grain combines	1971	21,854	59,975	39,910	1,428	—	154,575
	1976	23,174	61,126	42,689	1,704	2	161,852
Swathers	1971	22,406	59,825	38,989	1,764	—	134,352
	1976	23,526	62,544	43,944	3,119	2	152,012
Pick-up hay balers	1971	12,806	28,158	27,009	3,845	3	143,426
	1976	13,950	30,860	31,093	4,927	4	154,227
Forage crop harvesters	1971	1,312	2,601	3,780	1,786	1	27,584
	1976	1,569	3,275	5,099	2,062	1	34,717

¹Based on 1976 census-farm definition; farms with sales of \$1,200 or over.**11.36 Age of census-farm operators, by province, censuses 1971¹ and 1976 (number)**

Age of operator	Province or territory					
	Newfoundland		Prince Edward Island		Nova Scotia	
	1971	1976	1971	1976	1971	1976
Under 25 years	7	14	68	52	37	46
25-34 "	39	36	448	402	349	443
35-44 "	87	97	758	677	696	696
45-54 "	146	125	947	820	1,056	951
55-59 "	57	61	521	381	551	457
60-64 "	38	43	357	354	407	422
65-69 "	16	17	203	196	228	220
70 years and over	12	5	160	172	210	206
Total	402	398	3,462	3,054	3,534	3,441
	New Brunswick		Quebec		Ontario	
	1971	1976	1971	1976	1971	1976
Under 25 years	48	69	934	1,062	1,257	1,537
25-34 "	325	403	7,069	7,109	9,527	10,853
35-44 "	735	613	12,130	10,435	18,029	17,367
45-54 "	1,128	922	15,229	13,247	21,675	21,865
55-59 "	543	455	6,166	5,301	9,438	9,130
60-64 "	388	401	3,931	3,349	7,177	7,231
65-69 "	168	225	1,681	1,492	4,754	4,520
70 years and over	151	156	1,067	1,102	3,788	4,480
Total	3,486	3,244	48,207	43,097	75,645	76,983
	Manitoba		Saskatchewan		Alberta	
	1971	1976	1971	1976	1971	1976
Under 25 years	782	1,532	2,270	4,772	1,175	2,058
25-34 "	3,837	4,926	8,932	11,103	7,379	9,204
35-44 "	6,633	6,025	15,690	13,436	12,921	13,614
45-54 "	8,844	8,054	21,107	18,111	15,653	15,711
55-59 "	4,076	3,772	9,434	8,725	6,348	6,607
60-64 "	2,907	3,028	6,965	6,795	4,853	4,960
65-69 "	1,519	1,552	3,907	3,694	2,936	2,832
70 years and over	987	1,074	3,014	2,942	1,940	2,324
Total	29,585	29,963	71,319	69,578	53,205	57,310
	British Columbia		Yukon and Northwest Territories		Canada	
	1971	1976	1971	1976	1971	1976
Under 25 years	127	193	—	—	6,705	11,335
25-34 "	1,176	1,641	1	—	39,082	46,120
35-44 "	2,878	3,395	3	5	70,560	66,360
45-54 "	3,281	3,972	3	4	89,069	83,782
55-59 "	1,411	1,431	—	2	38,545	36,322
60-64 "	1,058	1,140	1	1	28,082	27,724
65-69 "	642	665	1	3	16,055	15,416
70 years and over	441	596	—	2	11,770	13,059
Total	11,014	13,033	9	17	299,868	300,118

¹See footnote 1, Table 11.35.

11.37 Harvested area, yields and prices of principal field crops, 1973-78

Crop and year	Area '000 ha	Yield kg per ha	Production '000 t	Average price \$ per t	Total value ¹ \$ '000
Wheat					
1973 ^r	9 577	1 688	16 162	164.29	2,655,276
1974 ^r	8 938	1 488	13 304	154.62	2,056,572
1975 ^r	9 479	1 802	17 081	..	2,272,283
1976	11 252	2 096	23 587	..	2,490,144 ^r
1977	10 114	1 964 ^r	19 862 ^r	..	..
1978	10 574	2 000	21 145	..	..
Oats					
1973 ^r	2 725	1 861	5 070	102.18	517,811
1974 ^r	2 499	1 591	3 977	101.33	403,552
1975 ^r	2 414	1 856	4 480	..	422,861
1976 ^r	2 409	2 005	4 831	..	369,406
1977	2 131	2 019	4 303	..	..
1978	1 829	1 980	3 621	..	..
Barley					
1973 ^r	4 835	2 113	10 218	114.63	1,171,352
1974 ^r	4 770	1 843	8 790	101.39	891,059
1975 ^r	4 463	2 131	9 510	..	1,004,646
1976 ^r	4 353	2 415	10 513	..	926,856
1977 ^r	4 751	2 483	11 798	..	..
1978	4 259	2 439	10 387	..	..
Rye					
1973 ^r	260	1 418	369	100.34	36,982
1974 ^r	352	1 420	499	87.98	43,969
1975 ^r	334	1 649	550	..	54,586
1976 ^r	251	1 758	441	..	37,264
1977 ^r	250	1 624	406	..	..
1978	318	1 903	605	..	..
Mixed grains					
1973 ^r	810	2 444	1 981	94.82	187,783
1974 ^r	728	2 246	1 636	102.49	167,386
1975 ^r	736	2 471	1 820	..	174,636
1976	645	2 433	1 569	..	129,397 ^r
1977	624	2 575	1 607	..	..
1978	606	2 705	1 639	..	..
Flaxseed					
1973	587	840	493	366.53	180,697
1974	587	597 ^r	350 ^r	373.05	130,940
1975	566 ^r	785	445	..	114,674 ^r
1976 ^r	324	855	277	..	74,106
1977 ^r	596	1 091	650	..	..
1978	518	1 079	559	..	..
Rapeseed					
1973	1 275	947	1 207	251.93	304,078
1974	1 279	910 ^r	1 164 ^r	311.51	362,288
1975 ^r	1 829	1 005	1 839	..	412,801
1976	720	1 163 ^r	837	..	223,803 ^r
1977 ^r	1 452	1 359	1 973	..	..
1978	2 801	1 240	3 474	..	..
Corn for grain					
1973 ^r	544	5 290	2 880	104.80	301,667
1974 ^r	597	4 386	2 620	121.73	317,555
1975	635	5 740	3 645	..	368,904 ^r
1976 ^r	706	5 317	3 755	..	331,685
1977 ^r	725	5 789	4 197	..	..
1978	783	5 383	4 215	..	..
Potatoes					
1973 ^r	103	20 719	2 132	114.29	258,245
1974 ^r	111	22 122	2 462	60.83	147,151
1975 ^r	101	21 179	2 141	..	243,632
1976 ^r	106	21 971	2 340	..	202,904
1977	111	22 414	2 488	..	..
1978	111	22 009	2 443	..	..
Tame hay					
1973 ^r	5 164	4 502	23 253	32.02	745,294
1974 ^r	5 314	4 356	23 143	47.92	1,109,378
1975 ^r	5 328	4 475	23 846	..	1,241,206
1976	5 731	4 357	24 972	..	1,153,925 ^r
1977	5 600 ^r	4 417 ^r	24 735	..	..
1978	5 607	4 800	26 916	..	..

¹Gross value of farm production; does not represent cash income from sales.

Sources

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Canada's mineral industry

12.1

Canada leads the world in value of mineral exports and ranks third among the diversified mineral producers in non-fuel mineral production behind the United States and the Soviet Union. The mineral industry has been a major factor in Canada's economic development and is still the main force in the northward advance of Canada's frontiers of population and economic activity.

The overall demand for Canadian non-fuel minerals in 1978 was up from 1977. Market conditions, however, varied widely among commodities. The value of mineral production in 1978 increased 6.4% compared with a 19.9% increase in 1977.

Canada's mineral production in 1978 was valued at \$19.7 billion compared with \$18.5 billion in 1977. Shipments of metals declined by 7.8%; however, non-metals shipments increased 14%, and structural materials 8% during 1978.

Canada produces about 60 different minerals from domestic deposits. The 10 leading minerals comprised 79% of the total output by value in 1978 compared with 81% in 1977. The 1978 value for the 10 leading minerals totalled \$15.6 billion. Individual values were: petroleum \$5.7 billion, natural gas \$3.9 billion, iron ore \$1.2 billion, copper \$1.1 billion, zinc \$791 million, coal \$733 million, nickel \$652 million, asbestos \$602 million, uranium \$589 million and potash \$493 million. The first four accounted for 60% of the total value of mineral production in 1978 compared to 59% in 1977 (Tables 12.1 - 12.5). Details on uranium production are given in Chapter 13.

Canada produces many minerals needed for modern economies although a few, such as manganese, chromium, bauxite and tin, are imported.

Sectors of production

12.1.1

Mineral production is divided into four sectors: metallics, non-metallics, mineral fuels and structural materials. The contribution of each of these groups to the total value of production in 1978 was as follows (1977 figures in brackets): mineral fuels 57.1% (53.4%), metallics 28.1% (32.4%), non-metallics 7.9% (7.4%) and structural materials 6.9% (6.6%). Value of mineral fuels production increased with the continued rise in energy prices. Structural materials are sold mainly in the domestic market where demand is more stable.

Price changes for minerals were mixed in 1978. Some declined because of reduced demand brought about by the relatively depressed state of the industrial economies; these included copper, nickel and zinc. Aluminum and lead prices rose during the year, as did those of the precious metals, iron ore in North America and several of the additive minerals, including molybdenum and cobalt. Canada's two major non-metals, asbestos and potash, both experienced price increases.

Export sales

12.1.2

Exports from the mineral industry have traditionally contributed a substantial proportion, more than a third, to Canada's total merchandise exports. Historically these mineral exports were predominantly of non-fuel materials, 80% or more in the mid-1960s. As energy prices increased in the early 1970s, energy exports became more significant, and in 1975 exceeded non-fuel mineral exports, accounting for 52% of total mineral exports. Since then the value of energy exports has declined, and in 1978 they amounted to about 47% of the total.

Exports of crude and fabricated mineral products in 1978 amounted to \$14.5 billion, of which 69.9% went to the United States, 14.5% to the European Economic Community (EEC) and 9.4% to Japan. Of the total, \$8.3 billion were crude minerals; 67.2% of these were shipped to the US, 11.2% to the EEC and 12.8% to Japan. The remaining \$6.2 billion mineral exports were fabricated materials, of which 73.6% went to the US, 9.0% to the EEC and 4.8% to Japan.

12.1.3 Leading minerals

Petroleum and natural gas production and refining is Canada's largest mineral industry. Domestic production and exports are small in the context of the world industry but are of great significance to Canada. The industry's growth in the past two decades has been of particular importance because of its effect on the balance of payments, as a source of revenue to the several levels of government, and for its impact on engineering and construction.

In 1978 total production of crude oil, gas and gas byproducts was valued at \$11.2 billion, an increase of 13.8% over the 1977 value of \$9.9 billion. Crude oil production is concentrated in Alberta, with Saskatchewan second and minor production elsewhere. The pattern of crude oil distribution in Canada reflects a national oil policy, allocating markets west of the Ottawa Valley to Canada's mid-continent producers while Quebec and Atlantic markets were supplied by overseas oil. Canada has produced oil almost equivalent to its total domestic needs but has imported oil in Eastern Canada from overseas and exported western oil to US markets. The possibility of depletion has been of concern and has affected amounts made available for export. Alberta oilfields are producing at near capacity and the region's economic reserves of oil will last 13 years at current depletion rates. Canada's North is the focus of optimism for large-scale oil finds.

Natural gas is an important domestic product and an increasingly important export product. Generally gas and oil are found together. In Canada, western provinces have the major proven reserves of gas. The value of gas and gas byproducts produced in 1978 was \$4.8 billion compared with oil at \$5.7 billion.

In 1978 iron ore production fell to 39.6 million tonnes (t). Production was valued at \$1.2 billion, a decline of 16.4% compared to 1977. Exports amounted to 32.0 million tonnes. The low level of shipments was due primarily to a strike of about four months duration in the Quebec-Labrador region. Nonetheless, iron ore ranked third among Canada's minerals in terms of production. Newfoundland, Quebec, Ontario and British Columbia are the only producers of iron ore.

Copper was fourth by output value in 1978. Production of recoverable copper from Canadian mines dropped by 7.2% to 657 500 t. Copper remained in oversupply in the world but a better balance between supply and demand was achieved. Copper is produced in all provinces except Prince Edward Island and Alberta. British Columbia accounted for 41.7%, Ontario for 29.6% and Quebec for 13.5% of 1978 production.

Zinc production in 1978 declined to 1.03 million tonnes from 1.07 million. Value also declined, but Canada remained the world's leading producer of zinc.

Coal production reached 30.3 million tonnes, up 6.0% from 28.7 million in 1977.

Nickel ranked seventh among Canadian minerals produced in 1978. Production declined 44.0% to 130 100 t as a result of cutbacks because of high inventories and a labour strike.

12.1.4 Growth of the industry

Estimated overall capital expenditures (capital and repair) in the mineral extraction industries declined 2.3% in 1978 to \$5,058 billion. Investment in petroleum and natural gas was \$3.2 billion, 5.3% higher than 1977, compared with non-metal mines at \$818 million, up 8.9%. Metal mines, at \$1.1 billion, were down 24.5%. Investment in iron mines fell to \$362 million from \$635 million in 1977, and fell \$38 million, or 10.2% to \$337 million for non-ferrous metal mining.

In mineral manufacturing, investment in non-metals at \$470 million was 4.7% higher than 1977, compared with petroleum and coal products at \$510 million, down 6.4%, and primary metals at \$1.5 billion, up 8.8%.

The volume index of mineral production, which measures the mining industry's absolute growth, based on the revised index of 1971 = 100, fell to 104.4 in 1978 from 114.3 in 1977.

12.2 Provincial summary

Alberta accounted for 49.6% and Ontario 13.2% of the Canadian output value of minerals in 1978. Quebec accounted for 9.3%, British Columbia 9.2%, Saskatchewan

7.9%, Newfoundland and Labrador 3.1%, Manitoba 2.4%, New Brunswick 1.6%, Yukon 1.1%, Northwest Territories 1.6%, Nova Scotia 1.0% and Prince Edward Island for a minimal amount. Tables 12.6 and 12.8 show mineral production and value by province.

Mineral production in Newfoundland and Labrador decreased 29.6%. Other decreases included iron ore 31.7%, lead 26.9% and asbestos 57.9%. Zinc production rose 3.3%. In Prince Edward Island sand and gravel production increased 2.0% in value. Nova Scotia mining production increased 27.8% in value. Coal, non-metallics and gypsum showed the greatest gains. In New Brunswick, metal products represented 81.7% of total mineral output. Zinc, lead and copper were the principal minerals and coal the principal fuel.

In Quebec, total mineral output increased by 8.8%. Iron ore, copper and zinc were the major metallics produced, and asbestos the major non-metallic. Titanium dioxide, a non-metallic, is produced only in Quebec and has firm world markets.

In Ontario the value of metallics fell by 18.3%. Nickel made up 24.6% of provincial output, copper 16.0%, precious metals 14.9%, iron ore 14.8% and zinc 9.8%. The range of minerals is more diverse in Ontario than in any other province. Output of fuels is relatively small. The principal non-metals — salt, nepheline syenite, asbestos, gypsum, quartz and sulphur — are produced in relatively small quantities. Structural materials produced increased in value in 1978.

Mineral production in Manitoba decreased 17.8%. Metallic minerals accounted for 71.3% of the total, with nickel 35.0%, copper 21.4% and zinc 9.4%. Crude petroleum contributed 9.3% of the provincial total. Manitoba produced 24.9% of Canada's nickel in 1978.

Saskatchewan produces mainly mineral fuels and non-metals. Crude petroleum represented 44.3% and potash 31.7% of mineral production, but metallics only 17.2%. Renewed interest in uranium resulted in increased production and Saskatchewan accounted for 42.1% of Canada's total.

In Alberta, crude petroleum, natural gas and natural gas byproducts represented 95.1% of 1978 total mineral production; sulphur, a byproduct in processing natural gas, represented 1.0%. Alberta produced 84.5% of Canada's petroleum and 91.7% of Canada's natural gas. Coal production accounted for 2.5% of provincial mineral production; structural materials made up most of the remainder.

Mineral output in British Columbia increased 7.8% in 1978. Metallics comprised 46.9% and mineral fuels 42.1% of all mineral production with copper accounting for 24.8%, zinc 4.3%, molybdenum 8.8% and lead 3.2%. Coal represented 19.3%, natural gas 14.4% and crude petroleum 7.2% of the total. Production of copper in all forms was increased with mine production value up 6.8%. Coal production increased and asbestos was the leading non-metallic mineral produced.

In the Northwest Territories, metallic minerals accounted for almost all mineral production. Zinc comprised 48.3%, lead 18.5%, gold 14.5% and silver 7.9% of total mineral output. Crude oil and natural gas are of considerable potential value mainly due to recent exploration developments in the Arctic Islands region. Tungsten production increased by 7.0% in 1978; the Northwest Territories is Canada's only producer of this metal. In Yukon, zinc made up 33.1% of total production, asbestos 14.2%, lead 28.7%, copper 7.9% and silver 12.9%. Output is not large by national standards but is increasing rapidly. A sharp drop in asbestos production in 1978 was due to the closure of the Clinton Creek mine of Cassiar Asbestos Corp.

Metals

12.3

Iron ore

12.3.1

Iron ore shipments by province from 1971-78 are given in Table 12.11. The lower level of shipments in 1978 was due primarily to a strike that paralyzed all iron ore operations in the Quebec-Labrador region from March 9 to July 14.

Iron ore was produced by 14 mining companies at 18 locations, with nine operations in Ontario, five in Quebec, two in Labrador, one in British Columbia and one in Quebec-Labrador. The Iron Ore Co. of Canada (IOC) was the largest Canadian

producer with 14.0 million tonnes followed by Quebec Cartier Mining Co. at 10.0 million and Wabush Mines at 4.3 million.

Exports decreased from 45.1 million tonnes in 1977 to 32.0 million in 1978. Imports increased from 2.5 million to 4.7 million. By 1979, imports from the United States by Canada's three major steel producers, namely, The Steel Co. of Canada Ltd. (Stelco), Dominion Foundries and Steel Ltd. (Dofasco) and The Algoma Steel Corp., Ltd. (Algoma) were expected to reach a high of 6.0 million a year as a result of investments by these companies in United States iron ore operations. Imports by these companies represented some 40% of Canada's total iron ore consumption in 1979.

Mine developments. In March 1978 Bethlehem Steel Corp. of the United States closed its Marmoraton Mining Co. mine, concentrator and plant near Marmora, Ont. About 1.5 to 2.0 million tonnes of ore were left in the ground. The closure date was advanced from July 1980 because demand for iron ore by Bethlehem had been considerably reduced and financial losses had been heavy in 1977. Markets other than steel are being sought by government and industry entrepreneurs for the remaining ore reserves.

Steep Rock Iron Mines Ltd. of Atikokan, Ont. ceased operations in August 1979 because of low reserves and because Caland Ore Co. Ltd. had decided to terminate its lease on the orebody owned by Steep Rock. Steep Rock also postponed the development

Canada's mineral production was valued at \$19.7 billion in 1978, more than half of it from petroleum, natural gas and iron ore. About 84.5% of the petroleum and 91.7% of the natural gas were produced in Alberta, and nearly all the iron ore came from Newfoundland, Quebec and Ontario. In 1968, Canada's total mineral production was valued at \$4.7 billion.

of the Bending Lake iron ore deposit located some 60 km (kilometres) northwest of Atikokan, mainly because of the iron ore surplus both at Algoma Steel and in the Great Lakes region. An assessment of Bending Lake proved the deposit to be uneconomic at least for the next couple of years.

A fourth division of Sidbec was formed: Sidbec International Inc. is responsible for export sales of iron ore pellets, sponge iron and raw steel. Sidbec-Feruni Inc. had been responsible for the sale of these products in the export markets.

Steel Alberta Ltd. purchased two adjacent iron ore properties located some 100 km south of Butte, Montana and 650 km south of Calgary. The iron ore deposit contains about 80 million tonnes of proven ore (magnetite) grading 25% to 28% iron and a further 80 million tonnes of probable ore. Initial plans call for a market survey in the United States and Canada for the sale of pellets and sponge iron.

A study is being prepared by the three major steel companies on the future developments (mid- to late-1980s) of iron ore deposits in northwestern Ontario. The study will determine the feasibility of building a pellet plant (possibly on Lake Superior) that would draw feed from their pooled deposits.

Toll increases on the St. Lawrence Seaway in 1978 raised the cost of iron ore imported through the Welland Canal from the United States. Also, royalty incomes for some Canadian exploration companies will be reduced by the toll increases because royalties are based on free on board prices of concentrates and pellets at Sept-Îles.

International development. A Canadian scientific mission visited China in 1978 to identify iron resources that are especially significant for the development of a modern iron ore industry in China and to discuss iron ore exploration and resource evaluation methods. The deposits in China are usually low grade and show many similarities with the deposits being mined in Canada. Geophysical equipment manufactured in Canada has been sold to China.

In August 1978, Chinese engineers visited several mines and iron ore processing plants in the Quebec-Labrador region, mining machinery manufacturers in Ontario and

consulting firms in Quebec. The Chinese bought mining machinery from manufacturing firms in Ontario worth over \$100 million.

At the end of 1978 Canadian Met-Chem Consultants Ltd. a subsidiary of United States Steel Corp., a consulting firm in Quebec, negotiated the development of a large mine and beneficiation plant.

A Russian delegation came to Canada in 1978 and visited iron ore mines in Ontario and Quebec to study open-pit mining operations and associated waste disposal techniques under severe climatic conditions.

Copper

12.3.2

Canadian mine production of recoverable copper amounted to 657 500 t in 1978 down from 759 400 t in 1977. This was due to strikes, lockouts, mine closures and cutbacks because of low prices, and oversupplied markets for co-produced metals. Among non-communist world producers Canada ranked third in mine production after the United States and Chile. Domestic consumption of copper in Canada rose by 14% in 1978, to 228 000 t.

Copper and nickel-copper ores were smelted at six locations in Canada at the end of 1978. Inco continued to operate an oxygen flash smelter at Copper Cliff, Ont. Falconbridge operated a smelter at Falconbridge, Ont., treating nickel-copper concentrates. Ores and concentrates from most mines in the Atlantic provinces, Quebec and Ontario were processed at the Noranda smelter of Noranda Mines Ltd. or at the Murdochville smelter of Gaspé Copper Mines Ltd., both in Quebec. At Murdochville, smelter production was 50 700 t of anode copper in 1978. A strike halted operations from October 16 until well into 1979. A shortage of concentrates was experienced at Noranda in 1978 and production fell to 205 000 t of anode copper compared with peak production of 244 000 t in 1974. Hudson Bay Mining and Smelting Co. Ltd. operates a smelter at Flin Flon, Man. and produces anode copper which is refined at the Montreal refinery of Canadian Copper Refiners Ltd.

Falconbridge completed its smelter modernization program, but only one line of the new facilities operated due to the reduced level of mining operations.

Afton Mines Ltd. completed a new copper smelter at Kamloops, BC; it was officially opened in April 1978. The smelter will produce 22 000 t of blister annually to be exported under long-term contract to the United Kingdom.

Electrolytic copper refineries were operated by Inco at Copper Cliff, Ont., and by Canadian Copper Refiners at Montreal, Que. Inco's copper refining capacity at Copper Cliff was 192 000 t a year. Copper is recovered in part as a byproduct from the refining of nickel. Canadian Copper Refiners has a capacity of 435 000 t of refined copper a year, making it the world's largest copper refinery.

At Texasgulf Inc.'s Kidd Creek concentrator near Timmins, Ont. a fourth circuit started to operate in May 1978 and performed satisfactorily during the second half of the year, permitting maintenance work to be carried out on the other circuits. Construction of the copper smelter and refinery continued, with completion scheduled for 1981. By 1981 copper output is expected to increase by more than 50% at the Kidd Creek mine.

Production curtailments undertaken by Inco Ltd. and Falconbridge Nickel Mines Ltd. in response to the chronic oversupply conditions in the world nickel market substantially reduced Canada's copper supply during 1978.

At the Ruttan mine of Sheritt Gordon Mines Ltd., in Manitoba, underground stope development and initial blasthole drilling began during the third quarter of 1978.

The Quebec government signed agreements with Campbell Chibougamau Mines Ltd. and Noranda Mines Ltd. to provide financial assistance and prevent mine closures. Quebec also held exploratory talks with the French government with a view to concluding a bilateral supply and price stabilization scheme for copper.

Copper production in Newfoundland came from two mines and totalled 11 101 t valued at \$18.2 million. In New Brunswick copper production from four mines was 10 711 t valued at \$17.5 million. In Quebec production fell to 88 704 t valued at \$145.6 million; about 12 mines were operating, the main production centres being Rouyn-Noranda, Matagami, Chibougamau and Murdochville.

Copper was produced at about 25 mines in Ontario, the main operations being the nickel-copper mines of the Sudbury district, copper-zinc and copper mines near Timmins, and copper-zinc mines near Manitouwadge. Ontario production fell to 194 340 t valued at \$318.8 million. This decline was mainly the effect of the lengthy strike at the Sudbury operations of Inco Ltd.

Production in Manitoba was 60 580 t valued at \$99.4 million. The major producer was Hudson Bay Mining which produced copper in Manitoba's Flin Flon and Snow Lake areas. Other areas of production were at Lynn Lake, Fox Lake, Ruttan and Thompson.

Production of copper in British Columbia amounted to 274 632 t valued at \$450.5 million. Most production comes from large open-pit mines. Production in Yukon increased substantially in 1977 and 1978.

12.3.3 Zinc

Canada remained the world's largest producer and trader of zinc in 1978. Approximately 25% of all zinc consumed in the western world originates from Canadian mines; this makes Canada's zinc industry over 90% reliant on foreign markets.

In 1978, there were 30 mine-mill operations in Canada producing zinc-in-concentrate. The zinc content of this production is estimated to be 1.2 million tonnes, compared with 1.3 million in 1977. No new capacity came on stream during the year; two projects were deferred because of the poor investment climate. There were no significant production disruptions due to transportation or labour strikes but some companies made use of vacation shutdowns as a means of inventory control. Thus mill capacity utilization remained at a level of about 84%. There was little change in the average recovery of zinc from ores, which in 1977 was 83% for zinc in zinc concentrates, and 89% for zinc in all concentrates.

Zinc metal production in Canada for 1978 was 495 420 t, up slightly. There is no secondary metal production in Canada; all production is derived from four electrolytic refineries. The two largest plants in the world are in Canada, operated by Cominco Ltd. and Canadian Electrolytic Zinc Ltd.

After 20 years of basic research, Sherritt Gordon Mines Ltd. concluded a successful pilot scale process for the pressure-leaching of zinc concentrates. The Sherritt process produces elemental sulphur and eliminates atmospheric emissions of sulphur-dioxide gas. The process can achieve extractions as high as 98% so that residue treatment is not necessary. In 1977, Cominco Ltd. and Sherritt conducted a joint venture pilot-plant program to further develop the process. The favourable results indicate high potential for commercial application.

The availability in Canada of zinc in scrap metal has traditionally been modest and until 1977 only small quantities of about 5 000 t were consumed directly in the manufacture of copper alloys, zinc oxides and dusts. In late 1977, Fers et Métaux Recyclés Ltée started up an auto-metal reclamation system which recovers about 5 000 t a year of zinc diecast alloy, mainly from shredded automobiles. The plant's capacity to process the non-ferrous portion of scrapped automobiles exceeds the automotive scrapping rate in Canada; further units are not likely to be built in Canada in the near future, given the small domestic market.

Domestic zinc metal consumption increased to 145 000 t in 1978, from 125 000 t. This consumption strength appeared to be broadly based, prompted in part by the ability of zinc consumers to be more competitive in foreign markets due to the devalued Canadian dollar.

12.3.4 Nickel

Canadian production of nickel in 1978 declined 44% relative to 1977 (Table 12.10). World production decreased 3.8%. At Inco Ltd., Sudbury, Ont., substantial production cuts early in the year were followed by further decreases because of a strike which began in September 1978. Increased nickel demand reduced Inco's inventories of nickel to 104 000 t at the end of 1978 down 50 000 t from year-end 1977. Ontario operations, the Copper Cliff North and Crean Hill mines, were placed on standby in 1978. The Sudbury rolling mill was completed at the end of 1977 at a cost of \$25 million and small amounts

of strip were produced in 1978. Falconbridge Nickel Mines Ltd., Canada's second largest producer, reduced mining operations to 50% of capacity in 1978 and the labour force by 750. Only two mines were left in operation, the Falconbridge and Strathcona. A new \$83 million smelter was brought on stream at mid-year.

In Manitoba, underground portions of the Pipe mine were placed on standby. At the Birchtree mine in Manitoba work was concentrated on mine development.

Gold

12.3.5

The International Monetary Fund (IMF) held 12 gold auctions during 1978 and sold 227 t. Total gold sold under the plan, started in 1976, was 535.8 t. There remained 241.8 t to be sold by May 1980. The United States Treasury held monthly gold auctions beginning in May 1978, sold 126 t of gold during that year, and continued making monthly sales in 1979. Successful bidders at the IMF and United States Treasury auctions were mainly European banks and bullion dealers but some North American banks and bullion dealers were also substantial purchasers.

Gold production in Canada in 1978 was 52.9 million grams valued at \$375.1 million compared with 53.9 million grams in 1977 valued at \$272.3 million. Volume of production was slightly lower but the value increased by 37.7%. There were 22 gold mines in operation with the ore being treated at 16 mills. One small gold mine opened in the latter part of 1978.

Lode gold mines accounted for 70.0% of the total gold produced compared with 73.0% in 1977. Gold recovered as a byproduct from base-metal mining accounted for about 29.0% and placer mining was lower than the previous year. Ontario continued to be the leading gold-producing province, accounting for 41.7% of the total, followed by Quebec with 27.4%, British Columbia 12.0% and Northwest Territories 11.9%. Canada ranked third in world gold production, well behind South Africa and the Soviet Union.

Volume of production was lower in 1978 than in 1977 in the Atlantic provinces, Ontario, Quebec and the Prairie provinces. It was higher in British Columbia, Yukon and Northwest Territories. The following paragraphs give 1978 production figures (1977 in brackets).

All gold produced in the Atlantic provinces was recovered as a byproduct of base-metal mining. It totalled 716 000 g (737 993 g).

Gold production in Quebec amounted to 14.5 million grams (15.0 million grams). Davis Gold Mines Inc. began mill trials at its gold property, the former O'Brian mines in the Cadillac district of northwestern Quebec in October 1978. Initial capacity of the mill was 180 t a day.

Gold production in Ontario was 22.0 million grams (23.0 million grams). Most of it was produced from lode gold mines.

Virtually all gold produced in the Prairie provinces was recovered as a byproduct from base-metal ores. Production was 0.4 million grams (0.5 million grams).

Most of the gold produced in British Columbia was recovered as a byproduct of base-metal mines, mainly from treatment of copper ores. Northair Mines Ltd. recorded its first year production in May 1977 at its gold-silver-lead-zinc mine about 113 km north of Vancouver. Concentrator capacity was 278 t a day and development was continuing. The copper mine of Afton Mines Ltd. near Kamloops is expected to be a substantial producer of byproduct gold. Placer gold production was 6.4 million grams (6.0 million grams).

Gold production in Yukon was 1.0 million grams (921 907 g). Gold was recovered from placer mines and base-metal operations.

Gold produced in the Northwest Territories, recovered from lode gold mines near Yellowknife, amounted to 6.3 million grams (6.2 million grams).

Lead

12.3.6

Canadian mine production of lead was 308 327 t in 1978, up from 280 955 t in 1977 and the highest level since 1970 while refined metal production at primary plants surpassed the 1977 record level of 187 000 t to an estimated level of 194 000 t. Consumption of lead remained at the peak level of 110 000 t achieved in 1977.

Mine production increased to 366 000 t in 1978 from 327 593 t as producers took measures, where possible, to take full advantage of the positive conditions for lead. Producers recorded a strike-free year with few technical production problems. There were 22 mines supplying lead-bearing ore to 19 mill facilities with a combined capacity of 71 250 t of ore a day.

The Buchans mine of ASARCO Inc. in central Newfoundland was approaching the end of its reserve life and was expected to close in 1980.

In New Brunswick the \$53 million expansion program at the No. 12 mine of Brunswick Mining and Smelting Corp. Ltd., deferred in 1977, was rescheduled for completion in 1980. The expansion will increase production capacity of lead-in-concentrate from 78 000 to 87 000 t a year. The company's No. 6 mine which began its underground phase in 1977 closed in late 1979 upon exhaustion of reserves.

Lead production in central Canada is a byproduct of copper-zinc mine production. Quebec has one lead-producing mine. Four are located in Ontario but they account for only 3% of Canada's output. Production from the Lyon Lake ore zone of Mattagami Lake Mines Ltd., deferred in 1977, was rescheduled to commence in 1980.

The H.B. mine of Cominco Ltd. was closed on September 1, 1978 due to exhaustion of reserves. Other production was normal although favourable lead zones at the Sullivan mine of Cominco allowed an increase in concentrate production over 1977 levels.

In the Northwest Territories production from both Pine Point Mines Ltd. and Nanisivik Mines Ltd. compared favourably with 1977 levels.

Negotiations continued throughout 1979 between Cominco Ltd. and the federal government concerning the development on the Polaris project on Little Cornwallis Island in the high Arctic. A deposit contains 22.7 million tonnes grading 14.1% zinc, 4.1% lead and 34 g (grams) of silver a tonne. If a favourable decision is taken the project could be on stream by the mid-1980s with annual output of about 25 000 t of lead contained in concentrate.

The Foreign Investment Review Agency gave approval in November 1978 to a West German proposal to establish a new secondary lead plant near Montreal. The 35 000 to 40 000 tonne-a-year plant, to cost about \$14 million and employ 200 persons, was expected to come on stream in December 1979.

12.3.7 Silver

Canada's mine production of silver in 1978, more than 1.2 million kilograms, was 108 000 kg less than 1977. Canada was the world's third largest mine producer of silver, surpassed by Mexico and the USSR. Other major producers were Peru and the United States.

Lower mine production of silver from base-metal ores in Ontario and British Columbia accounted for most of the decrease. Silver output in New Brunswick, recovered mainly from base-metal ores, increased 17.8%.

Ontario was the leading silver-producing province with output in 1978 accounting for about 35% of Canadian mine production. The largest producer in Canada was Texasgulf Canada Ltd., which recovered over 243 400 kg of silver in copper, lead and zinc concentrates at its Kidd Creek mine near Timmins, Ont.

In the Prairie region much of the silver came from nine base-metal mines operated by Hudson Bay Mining near Flin Flon and Snow Lake, Man. Most of the remainder was derived from the Fox and Ruttan copper-zinc mines operated by Sheritt Gordon Mines Ltd. at Lynn Lake and Ruttan, Man.

Base-metal ores continued to be the main source of British Columbia's mine production of silver. Cominco, the province's major producer, recovered silver from the lead-zinc-silver ores of its Sullivan mine in southeastern British Columbia and from purchased ores and concentrates.

Silver production in the Northwest Territories was higher in 1978 mainly because of greater output by Terra Mining and Exploration Ltd. which operates a silver-copper property near Port Radium on the east shore of Great Bear Lake. Other producers were Echo Bay Mines Ltd. which also operates a silver-copper mine near Port Radium and the base-metal mine of Nanisivik Mines Ltd. at Strathcona Sound on Baffin Island.

A significant increase in silver production in Yukon resulted from greater byproduct output at the lead-zinc-silver mine of Cyprus Anvil Mining Corp. at Faro.

Base-metal ores continue to be the main source of Canadian silver output, accounting for about 80% of total mine production in 1978. About 19% is derived from mines whose primary product is silver. The remaining 1.0% comes from silver-cobalt ores mined in the Cobalt district of northern Ontario or as byproduct recovery from lode and placer gold ores.

Canadian silver production was valued at about \$238.9 million in 1978 (Table 12.4). The \$31.1 million increase from 1977 resulted from significantly higher prices. The price in Canada fluctuated in 1978 between a low of \$170.1 a kilogram and a high of \$237.2. Reported industrial consumption of silver in 1978 was 280.7 t compared with 264.4 t in 1977. Additional quantities of about 9.2 t in 1978 and 8.4 t in 1977 were used by the Royal Canadian Mint for coinage.

In 1978 refined silver was produced at six Canadian primary refineries, the largest being Canadian Copper Refiners Ltd. at Montreal, Que. In 1977 it recovered 683 841 kg from the treatment of anode and blister copper. The silver refinery of Cominco at Trail, BC was the second largest producer, in 1977 recovering 292 248 kg of byproduct silver in processing lead and zinc ores and concentrates. Other producers of refined silver were Inco at Copper Cliff, Ont., from nickel-copper concentrates; Canadian Smelting & Refining (1974) Ltd. at Cobalt, Ont., mainly from silver-cobalt ores and concentrates produced by the Cobalt area mines; and the mint at Ottawa, from gold bullion. At Belledune, NB, Brunswick Mining and Smelting Corp. recovered byproduct silver bullion from lead concentrates treated in a blast furnace.

Molybdenum

12.3.8

Canadian shipments of molybdenum in 1978 were 14.1 million kilograms valued at \$170 million. Over 95% of Canadian molybdenum is produced in British Columbia with Quebec the only other producing province. Canada is the second largest producer in the world, accounting for some 16% of western world production.

Prior to 1969, most molybdenum in Canada was produced from primary sources. Since 1969, molybdenum has also been produced as a byproduct or a coproduct with copper from large low-grade copper-molybdenum deposits in British Columbia. These deposits have become an important source of supply accounting for approximately 50% of Canadian production.

There are two primary producers of molybdenum in Canada — Endako Mines Division of Canex Placer Ltd. and Brynnor Mines Ltd. — both in British Columbia. Endako is the largest, accounting for approximately 45% of Canada's production. In 1978, molybdenum was recovered as a byproduct or coproduct of copper at five mines in British Columbia: Bethlehem Copper Corp., Brenda Mines Ltd., Gibraltar Mines Ltd., Lornex Mining Corp. Ltd. and Utah Mines Ltd., and from one mine in Quebec, Gaspé Copper Mines Ltd. Brenda is the second largest, accounting for approximately 23% of molybdenum production.

Climax Molybdenum Corp. of British Columbia, Ltd. announced plans to reopen a molybdenum mine located near Kitsault, BC. This mine, which last produced in 1972, was purchased by Climax in 1973 from Kennecott Copper Corp. Climax will double the existing mining and milling capacity and at capacity it will produce 4 500 t of molybdenum a year in the form of disulphide concentrate. Production start-up is set for mid-1981. Reserves are estimated at nearly 100 million tonnes averaging nearly 0.2% molybdenum disulphide.

Platinum group metals

12.3.9

Production of these metals in 1978 was 8.7 million grams valued at \$55.7 million compared with 14.5 million grams in 1977 valued at \$62.0 million. The 40% decrease was largely due to reduced nickel production and a strike at Inco. Canada produces platinum metals as a byproduct of nickel refining. When nickel matte is electrolytically refined, the platinum group metals — platinum, palladium, rhodium, ruthenium, iridium and osmium — concentrate in the residue. The residue or sludge is upgraded and sent to refineries in Britain and the US for recovery of the platinum metals. Canada

ranked third in world platinum metals production in 1978 behind South Africa and the USSR.

Producer and dealer prices of platinum increased to record levels in 1978. Fluctuations were caused by world currency problems and increased demand by consumers and speculators. The producer price climbed sharply from US\$5.95 a gram at the beginning of the year to about US\$10.95. The palladium price was relatively stable but, influenced by the erratic platinum price, it increased from US\$1.67 a gram to a high of US\$2.20. The producer price for rhodium ranged from US\$14.79 to US\$20.90 a gram. Prices of iridium, ruthenium and osmium remained unchanged.

12.3.10 Cobalt

Canadian shipments of cobalt amounted to 1 163 t valued at \$27.1 million in 1978 compared with 1 485 t valued at \$18.8 million in 1977. Cobalt is recovered principally as a byproduct of nickel-copper ores.

Canada's leading producer, Inco, recovers cobalt as an oxide at its nickel refinery at Thompson, Man. and Port Colborne, Ont. and produces cobalt oxide at its refinery in Clydach, Wales, from nickel matte produced in Canada. The Clydach refinery also processes some crude oxides produced in Canada into upgraded salts and metal. Falconbridge Nickel recovers cobalt metal, from nickel matte produced in Canada, at its cobalt refinery in Kristiansand, Norway.

Sherritt Gordon Mines recovers cobalt metal powder from nickel end-solutions at its hydrometallurgical refinery at Fort Saskatchewan, Alta. The refinery treats nickel-copper concentrates purchased from several nickel operations in Western Australia.

12.3.11 Magnesium

Canadian production of magnesium in 1978 was 8 269 t valued at \$19.6 million. Production increased from 7 633 t in 1977, but well below the 9 650 t reached in 1969. The only Canadian producer of primary magnesium, Chromasco Corp. Ltd., has operated a mine and smelter at Haley, Ont., 80.5 km west of Ottawa, since 1942. World production of primary magnesium in 1978 is estimated at 250 000 t compared with 257 210 in 1977. The United States produced almost half the world output.

Exports of Canadian magnesium metal have entered the US duty-free under a Canada-US defence production sharing program but on a reduced scale over the past few years. The US duty on magnesium ingots and further-processed products is being reduced progressively in accordance with negotiations under the General Agreement on Tariffs and Trade. However, only in certain high-purity items can the Canadian product find a market in the US. Exports of Canadian magnesium ingots face a 20% tariff when entering the US domestic market whereas the comparable Canadian tariff is 5%.

12.3.12 Columbium (niobium) and tantalum

Canadian shipments of columbium as columbium pentoxide were 2 535 t in 1978 compared with 2 517 t in 1977, with a corresponding increase in value.

Niobec Inc., with a mine, mill and concentrator near Chicoutimi, Que., is Canada's only producer of columbium and has one of the three mines in the world that produce columbium in pyrochlore concentrates as a primary product; the other larger operations are in Brazil. Niobec Inc. is a joint venture of Teck Corp., Copperfields Mining Corp. and Quebec Mining Exploration Co. The mill was designed for an initial capacity of 1 361 t of ore a day with provision for rapid expansion to 1 814 t a day if demand warrants it. Niobec began production in 1976.

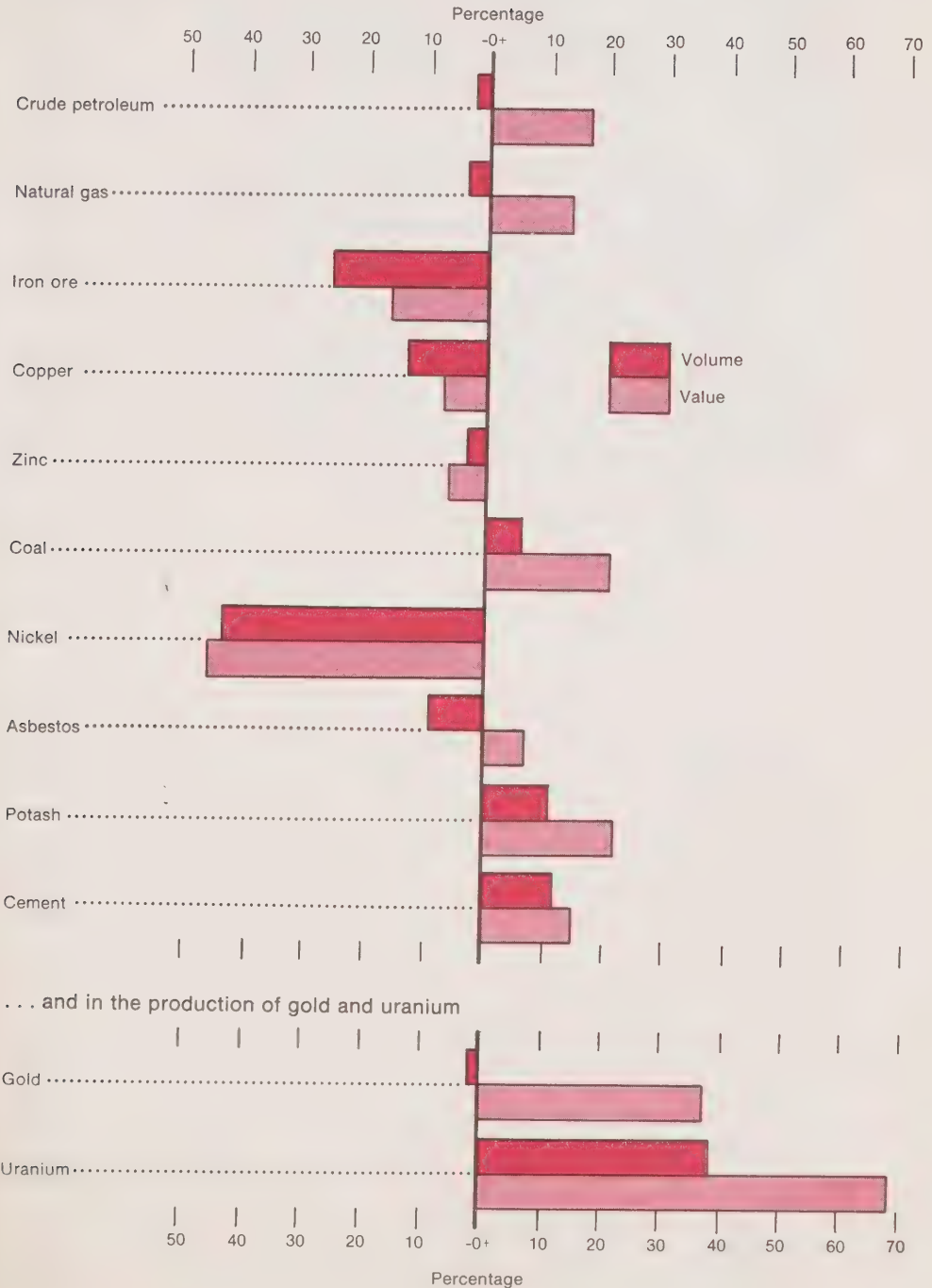
There is only one producer of tantalum concentrates in Canada, Tantalum Mining Corp. of Canada Ltd. (Tanco), with a mine and mill at Bernic Lake, Man. In 1978, Tanco production was little changed from the approximately 145 000 kg of tantalum pentoxide produced in 1977. Tanco is the world's largest single mine source of tantalum; its known reserves are believed to be sufficient to maintain the current level of operations only until 1982.

12.3.13 Cadmium

Cadmium production in 1978 was 965 t valued at \$5.9 million compared to 1 185 t valued at \$8.2 million in 1977. Most zinc ores in Canada contain recoverable cadmium

Mineral production in Canada

Percentage changes in volume and value of leading minerals, 1977-78



in quantities varying from 0.001% to 0.067% and zinc concentrates contain up to 0.7% cadmium. The largest mine production comes from Kidd Creek mine of Texasgulf Canada near Timmins, Ont., followed by the Geco mine of Noranda Mines at Manitouwadge, Ont. Other important producers are Cominco Ltd. in British Columbia, Hudson Bay Mining and Smelting in Saskatchewan and Manitoba, the Noranda group of companies in Ontario, Quebec and New Brunswick, Pine Point Mines Ltd. in the Northwest Territories and Cyprus Anvil Mining Corp. in Yukon.

Metallic cadmium is recovered as a byproduct at the electrolytic zinc plants of Cominco at Trail, BC, Hudson Bay Mining and Smelting at Flin Flon, Man., Canadian Electrolytic Zinc Ltd. at Valleyfield, Que., and Texasgulf Canada near Timmins, Ont.

12.3.14 Tungsten

The only producer of tungsten concentrates is Canada Tungsten Mining Corp. Ltd. Its mine in the Northwest Territories produced some 2.8 million kilograms of tungsten trioxide in concentrate in 1978. This increase of almost 30% over 1977 was primarily due to higher recovery rates in the mill and a better grade of ore from the mine. An expansion program, started in 1977 and aimed at doubling the company's capacity by 1979, was completed on schedule. In mid-year AMAX Inc. increased its interest in Canada Tungsten from 49 to 65% by purchasing an additional 800,000 shares.

Billiton Exploration Canada Ltd. completed a feasibility study on the tungsten-molybdenum-bismuth orebody at Burnt Hill, NB. Billiton and Brunswick Tin Mines Ltd. will participate equally in bringing the property into production should the final results of the study warrant development. AMAX Exploration, Inc., wholly owned subsidiary of AMAX Inc., identified a scheelite deposit in the MacMillan Ross area of the Northwest Territories with possible reserves of 30 million tonnes averaging 0.9% tungsten, possibly the largest known single deposit in the world. While AMAX Exploration completed several studies on the feasibility of developing the deposit, there was no indication when development could begin.

12.4 Industrial minerals

12.4.1 Asbestos

Canadian shipments of asbestos fibre were 1.38 million tonnes valued at \$602 million in 1978, compared to 1.52 million tonnes valued at \$563 million in 1977. All Canadian production consists of chrysotile and in 1977 more than 80% came from Quebec, 6% each from British Columbia and Yukon, 5% from Newfoundland, and less than 1% from Ontario.

Canada is the world's largest exporter of asbestos, shipping over 90% of its production to more than 70 countries. The United States is the largest market, accounting for nearly 40% of Canadian exports, followed by the Federal Republic of Germany, Japan and the United Kingdom. These four countries consumed over 60% of Canadian exports, which totalled about 1.4 million tonnes in 1978.

World demand for asbestos fibre is expected to increase slowly during the next several years, mainly on the basis of growth in developing countries. Most companies continued to allocate large capital expenditures for modernization programs and environmental improvements to allow compliance with stricter regulations applying to the marketplace and outside air emissions.

An act to create a Quebec Crown corporation Société nationale de l'amiante (SNA), was assented to in May 1978 in the Quebec National Assembly. Authorized capitalization of SNA will be \$250 million to implement the government's direct participation in the asbestos mining industry. A planned \$250 million will be set aside for purchase of Asbestos Corp. Ltd. (ACL) to transform into finished products from 10 to 12% of the fibre produced in Quebec; to start new product research and development; to undertake joint ventures with other asbestos mining and manufacturing companies; and to evaluate new mining projects.

Economic evaluation continued at two major prospective producers in Quebec. These are the Abitibi Asbestos Mining Co. Ltd. property north of Amos, Que., being

evaluated by Brinco Ltd., and the McAdam Mining Corp. Ltd. property east of Chibougamau, being evaluated by Rio Algom Ltd.

In 1978, Cassiar Asbestos Corp. Ltd. in British Columbia produced over 70 000 t of fibre from the Cassiar mine. The same company produced more than 60 000 t of fibre from its Clinton Creek, Yukon mine. Production from Clinton Creek ceased in mid-1978 when ore reserves were exhausted.

Advocate Mines Ltd., Newfoundland's only asbestos producer, produced approximately 30 000 t of fibre in 1978. A four-month long strike severely curtailed output.

Clay and clay products

12.4.2

Shipments of clay and clay products from domestic sources in 1978 were valued at \$107 million, up from the 1977 figure of \$103 million. Deposits of clay for use in the manufacture of papers, refractories, high quality whitewares and stoneware products are scarce in Canada so many of these products, as well as china clay (kaolin), fire clay, ball clay and stoneware clay, are largely imported. In Canada common clays and shales, higher in alkalis and lower in alumina than the other clays, are used to manufacture brick and tile products.

Potash

12.4.3

Canadian shipments, at \$493 million in 1978, all from Saskatchewan, amounted to 6.4 million tonnes of potassium dioxide equivalent compared with 5.7 million shipped in 1977 (Table 12.18). Installed production capacity was 12.3 million tonnes of potassium chloride. In 1978 the industry operated at 81% capacity and the Saskatchewan government completed a program of acquiring potash mines through the Crown corporation Potash Corp. of Saskatchewan which now controls approximately 40% of the industry.

About 95% of the world's potash output is used for fertilizers, the balance being used for industrial purposes.

In New Brunswick, Potash Co. of America completed exploratory drilling and began development plans on a potash lease granted in 1973 to bring a potash mine into production in 1981. A lease was issued to the International Minerals & Chemical Corp. (Canada) Ltd. (IMC Canada) for exploration and development of potash and salt on a 200 km² tract near Salt Springs. Of 10 holes drilled, seven made intersections in potash.

Salt

12.4.4

Canadian shipments of salt amounted to 6.2 million tonnes valued at \$104 million in 1978. About 70% of the total was rock salt used principally for snow and ice control on streets and highways and for chemical manufacturing. The remainder is fine (evaporated) vacuum salt and salt as brine used for producing caustic soda and chlorine.

There are three rock salt mines, one in Nova Scotia and two in Ontario. Salt is produced as a byproduct of potash mining in Saskatchewan. The two companies drilling for potash in New Brunswick were also exploring for salt, and were to continue development. Fine salt evaporator plants and brining operations are located in Nova Scotia, Ontario, Manitoba, Saskatchewan and Alberta.

The Quebec government through Seleine Inc., a subsidiary of Quebec Mining Exploration Co., advanced its plans to develop a salt mine in the Magdalen Islands. Total capital costs for the mine and an associated port were forecast to exceed \$50 million. Quebec Mining expected initial production at the rate of about 900 000 t a year to begin in 1980.

Sulphur

12.4.5

Canadian sulphur shipments in all forms in 1978 amounted to 6.5 million tonnes valued at \$114 million. Shipments increased 10% in volume and 20% in value compared to 1977.

Canadian sulphur is obtained from three sources: sour natural gas and petroleum, including the tar sands, which produce elemental sulphur; smelter gases which produce sulphuric acid; and pyrite concentrates used in the manufacture of sulphuric acid. Small amounts of elemental sulphur are recovered as a byproduct of electrolytic refining of

nickel sulphide matte and a small quantity of liquid sulphur dioxide is produced from pyrites and smelter gases. In 1978, 88% of sulphur shipments were in elemental form, nearly all from sour natural gas.

Canadian production of sulphur in all forms peaked in 1973 at 8.1 million tonnes, 7.4 million in elemental form. In 1978, total output was estimated at 7.0 million tonnes, the 12% decline mainly reflecting reduced output from sour natural gas in Western Canada. The difference between production and shipments of 0.5 million tonnes represents addition to stockpiles which have topped 21 million. Since 1968 Canada has been the world's largest exporter of elemental sulphur.

12.4.6 Gypsum

In 1978 Canadian production of crude gypsum, valued at \$36.8 million, rose to 7.9 million tonnes from 7.2 million in 1977, most of it exported to the Eastern US. Exports were mainly from Nova Scotia and Newfoundland quarries operated by Canadian subsidiaries of US gypsum products manufacturers.

Nine companies produced crude gypsum at 13 locations, while five manufactured gypsum products at 19 locations. Production of gypsum in Canada is closely related to the building construction industry, particularly residential building in both Canada and the Eastern US.

Construction of plant and mine expansions continued at the Ontario operations of both Domtar Inc. and Canadian Gypsum Co. Ltd. A new shaft, developed during 1978 by Westroc Industries Ltd. at Drumbo, Ont., started production in January 1979. Westroc began shipments from a new quarry at Amaranth, Man. in October 1978.

12.4.7 Nepheline syenite

Nepheline syenite was produced from two operations on Blue Mountain, 40 km northeast of Peterborough, Ont. In 1978 production was estimated at 579 000 t, up marginally over 1977. The value of shipments was \$13.1 million, up 8%. Exports accounted for 71% of total shipments. Sales to the US, 91% of Canada's total exports, decreased 7%. Nepheline syenite is preferred to feldspar as a source of essential alumina and alkalis in glass manufacture. Other uses include the manufacture of ceramics, enamels, paints, papers, plastics and foam rubber. Canada is the world's largest producer of nepheline syenite.

12.4.8 Structural materials

The value of all construction undertaken in Canada in 1978 was roughly \$38 billion, an increase of 6.0% over 1977. Production of such structural materials as cement, sand and gravel, stone, clay and clay products and lime, was valued at \$1.4 billion, 7% of the total value of mineral production in Canada.

Canadian production of cement, valued at \$481 million in 1978, was 10.8 million tonnes, an increase reflecting increased demand for cement in the United States at a time when US producers could not maintain production goals. Cement was produced in all provinces except Prince Edward Island with Ontario and Quebec accounting for 65% of the Canadian total. Production capacity at the end of 1978 was about 16 million tonnes a year, excluding the capacity of five clinker grinding plants, two of them (belonging to Canada Cement Lafarge Ltd.) former fully integrated cement plants. Capacity changes indicated a net increase of 1.0 million tonnes a year. A new plant of Inland Cement Industries Ltd. at Vancouver came on stream but its Bamberton plant was not phased out as planned because of the buoyant export market. The rehabilitation and conversion of the Canada Cement Lafarge Ltd. Montreal plant was not continued because of poor market conditions in Quebec.

An expansion program at Inland's Edmonton, Alta. plant was reassessed in 1978 to include a new dry process kiln. Upon plant completion, the new capacity will be 1.2 million tonnes. Production at Canada Cement Lafarge in Edmonton was expected to increase to 600 000 t by 1980.

Genstar Ltd. of Montreal, which also controls Inland Cement Industries Ltd. sold its subsidiary operation, Miron Company Ltd., in 1979. Miron, operating in the St.

Michel district of Montreal, has been one of the largest cement producers in Quebec and also includes major concrete products and construction branches.

In its first move outside of Ontario since it was founded in 1912, St. Marys Cement Ltd. acquired all the assets of Wyandotte Cement Inc. of Michigan, affording the company access to US markets. Wyandotte will grind clinker from St. Marys Bowmanville, Ont. plant and other sources to produce about 350 000 t of cement a year for the Detroit regional market.

Early in 1978 St. Lawrence Cement Co. leased a 750 000 t a year plant from Colonial Sand and Stone Co., Inc., Kingston, New York, with an option to purchase (for US\$7 million) within six years.

The cement industry's goal of a 9% to 12% reduction in energy consumption by 1980, compared to the base year of 1974, appears to be realistic as production in 1977 required 4.91 million Btus a ton, 8.2% lower than the unit consumption in 1974.

Production of sand and gravel in 1978 was 265 million tonnes valued at \$375 million. Sand and gravel must be quarried, screened, washed, stockpiled and transported in large volume to compensate for the low unit value received. Transportation and handling often double the plant cost, making it economically desirable to establish plants close to major consuming centres. Urban expansion has greatly accelerated the demand for sand and gravel and many pits and quarries have been over-run by growing communities. Sand and gravel are used as fill, as granular base course and finish course in highway construction and as aggregate in concrete and asphalt.

Production of stone in 1978 was 112 million tonnes valued at \$317 million. Dimension stone, for use in building and ornamental work, accounts for about 1%. Crushed stone for use as aggregate in concrete and asphalt, as railroad ballast and road metal accounts for about 80% and the remainder is used in metallurgical, chemical and allied industries.

Mineral fuels

12.5

Chapter 13, Energy, and Tables 12.4 and 12.8 give an outline of coal, oil, natural gas and uranium as well as production figures.

Coal

12.5.1

Canada's coal industry continued to grow in 1978 with production, consumption and several other indicators registering increases over 1977. As with the previous year, the thermal sector of the industry was more active than the coking sector. The value of production increased to \$733 million in 1978, up from \$609 million in 1977.

Oil and natural gas

12.5.2

The outlook for the Canadian oil and gas industry, particularly in terms of supply, improved markedly in 1978 as realized potential for proving up significant amounts of new oil and gas reserves in western Canada was augmented to some degree by exploratory successes offshore in the Canadian Arctic and Labrador Sea. The prospect that the frontier regions might ultimately yield significant quantities of oil in addition to gas is now a possibility and is most timely since Canada's oil reserves have been declining steadily for the past decade. The supply scenario for natural gas is more favourable than that of oil. Additions to gas reserves from established producing areas, which fell below annual production in 1972 and 1973, are well above production rates.

Uranium

12.5.3

Prospects for the uranium industry remained buoyant throughout 1978 despite continued uncertainty about projections of nuclear power growth. Perhaps the most important stimulus to the industry was the approval by the Ontario government of two major long-term sales contracts to Ontario Hydro which will permit uranium operations to continue in the Elliot Lake area of Ontario, well into the next century. With continued growth in Canada's export markets it was expected that uranium would once again become one of Canada's leading export commodities.

12.6 Manufactured metals

12.6.1 Aluminum

Canadian production of aluminum in 1978 was 1.0 million tonnes compared with 973 524 t in 1977. Consumption in Canada was 380 290 t for 1978, an increase of about 14.4% above the 332 393 t consumed in 1977. The Canadian aluminum industry's increased output reflected the stronger external demand and Canadian smelters correspondingly operated at near full capacity during the year.

Two companies operate primary aluminum smelters in Canada, the Aluminum Co. of Canada, Ltd. (Alcan), and Canadian Reynolds Metals Co. Ltd. Alcan operates four aluminum smelters in Quebec at Jonquière, Isle-Maligne, Beauharnois and Shawinigan, and one at Kitimat in British Columbia with a combined capacity of 904 000 t of aluminum a year. Alcan also operates an alumina plant at Jonquière that supplies its Quebec smelters. The Baie-Comeau, Que. smelter of Canadian Reynolds Metals Co. Ltd. has a capacity of 158 800 t a year.

Construction continued on Alcan's new 171 000 t a year smelter near La Baie, Que. The first 57 000 t phase was expected to be in production by the end of 1980. The second and third phases were planned for completion in 1981 and 1982, respectively. Total capital cost was estimated at \$415 million.

Alcan's subsidiary and related smelter operations outside Canada are located in Japan, United Kingdom, India, Brazil, Australia, the Federal Republic of Germany and Spain.

12.6.2 Iron and steel

The Canadian steel industry performed above expectations during 1978 and crude steel production increased by 6.0% to 14.9 million tonnes. The industry operated at 83% of installed capacity. Shipments from iron and steel mills were valued at \$4.8 billion. Consumption of crude steel increased by 5.5% to 13.6 million tonnes even though real economic growth was only 3.4%. Domestic markets were firmer as most product lines were strong, notably those related to the automotive sector, construction, and oil and natural gas development. Steel service centres were particularly active. Some hedge-buying occurred early in the year in anticipation of possible strikes; however, labour disruptions were minimal. The lower-valued Canadian dollar improved Canada's competitive position in export markets and this boosted steel exports and exports of steel-based manufactured products, particularly to the United States. From the perspective of the North American steel market alone, there was a marked firming of steel demand after a three-year period of relatively sluggish activity. This, coupled with higher prices, meant higher revenues and increased profits for most Canadian and United States steel producers.

The Steel Co. of Canada Ltd. (Stelco), the largest steel producer in Canada, continued building its Greenfield steel complex near Nanticoke on Lake Erie. The first phase of the Nanticoke project, which commenced in 1974, was scheduled for completion by mid-1980 and will have steelmaking capacity of about one million tonnes a year. Initially, only slabs will be produced and these will be transported to Hamilton for finishing into steel products. Eventual capacity at the Nanticoke site is expected to be 5.4 million tonnes. At Stelco's Stelform pipe mill at Welland, Ont., additional equipment was being installed and modifications made to existing facilities to better meet stringent specifications for northern pipelines.

Production and shipments of Algoma Steel Corp. Ltd. increased. Work recommenced on rebuilding a coke oven battery, constructing a new slab caster, and completing major repairs on a blast furnace. A decision was made to expand the seamless tube heat-treating capacity by 50%. A new \$24 million heat-treating line for wide steel plate was also expected to be on line by late 1980.

Dominion Foundries and Steel Ltd. (Dofasco) completed three major elements of an expansion program. A basic oxygen steelmaking plant came on stream, as did a coke oven battery and eight new soaking pits. A new melt shop, with a capacity of 910 000 t a

year, was officially opened; the site was designed so that capacity could be increased in stages to 5.4 million tonnes.

A large scale expansion program undertaken by Sidbec-Dosco Ltd. in 1973 at its Contrecoeur site was completed in early 1978 when a new slab caster was commissioned. Sidbec became the fourth largest steel producer in Canada with crude steelmaking capacity of about 1.5 million tonnes.

Interprovincial Steel and Pipe Corp. Ltd. (IPSCO), the largest pipe producer in Canada, announced a \$68.5 million expansion for its Regina steel plant to increase steelmaking capacity by about one-third to 630 000 t a year. This program will enable IPSCO to increase its production capability of large diameter Arctic-grade pipe.

Sydney Steel Corp. (Sysco) of Sydney, NS, a provincial Crown corporation, continued with an \$18 million rehabilitation program during 1978 to overhaul or replace key equipment, reactivate a continuous casting machine and introduce metering and control systems. Sysco announced a new six-year \$200 million contract with Canadian National Railway for rails, with annual shipments to range between 80 000 t and 109 000 t.

Tree Island Steel Co. Ltd. (Tisco) of Richmond, BC was to construct a \$50 million steel wire rod mill with annual capacity of some 218 000 t for start-up in the early 1980s. Tisco's two wire mills in Richmond and Los Angeles would each receive about 25% of production from the new plant, with the balance to be marketed in western Canada and the northwestern United States.

Lake Ontario Steel Co. Ltd. (Lasco) of Whitby, Ont. planned to double its electric steelmaking capacity from 400 000 to 800 000 t a year by 1980. Stanley Steel Co., Ltd. was doubling capacity at its Hamilton plant to 160 000 t a year by adding a new rolling mill, a \$10 million project to be completed in late 1980.

Courtice Specialty Steels Ltd. reached agreement with Sysco for the supply of billets to be delivered over a three-year period. Annual shipments will range between a minimum of 33 000 t and a maximum of 43 000 t. The mill, which came on stream in early 1977 at Bowmanville, Ont., has a capacity of some 50 000 t of rebars, rounds, squares and angles.

The Nova Scotia government terminated activities of the provincial Crown corporation, Cansteel Corp. which had been established in 1975 to investigate the potential for development of a new large-scale steel plant at Gabarus Bay, Cape Breton Island.

During the year the Canadian Anti-Dumping Tribunal ruled that injury had taken place or would take place from dumping stainless steel plate from Japan and South Africa, stainless steel sheet from Japan and the Federal Republic of Germany and graphite electrodes from Japan.

In early 1978, Revenue Canada was given responsibility to monitor Canadian steel imports and set up procedures to deal quickly with any injuriously dumped steel. Accordingly, a task force produced a benchmark price system as criteria against which to direct import prices. These prices established a price threshold below which customs officials can normally suspect that dumping is taking place and can initiate an accelerated investigation if it appears that Canadian steel producers are being injured. The task force also consults regularly with the steel industry and this system appears to be working successfully.

Government aid to the mineral industry

12.7

Federal government aid

12.7.1

The federal government helps mining by providing detailed geological, geophysical, topographical, geodetic, geographical and marine data; technical information concerning the processing of ores, industrial minerals and fuels on a commercial scale; and certain tax incentives.

The Department of Energy, Mines and Resources. This federal department was created on October 1, 1966 (RSC 1970, c.E-6). It conducts research into methods of extracting and processing minerals and fuels. Emphasis is placed on recovery techniques

for ores and minerals with low-grade impurities or complex mineral composition. Fuels research includes evaluation of fossil fuels and development of refining methods for the low-grade, high-sulphur petroleum of the Athabasca oil sands. Research is also being conducted to improve burning qualities of coal. In the related area of the extraction of metal by heat, research is concentrated on development of a shaft electric furnace for smelting iron ore. In mineral sciences, the department carries out physical, chemical, crystallographic and magnetic studies to determine characteristics important to extraction and processing methods. It also produces standard reference ores and metals needed by mining and metallurgical companies. In metals research, in addition to improving techniques for metal forming, attention is focused on ensuring structural soundness of metal pipelines for the Arctic. Other programs are directed toward reduction of pollution and conversion of mineral waste into useful materials such as fillers and ceramics.

The department's geological survey maps and studies the geology of Canada. A principal aim is to ascertain available mineral and energy resource potential. The survey estimates the amount and distribution of mineral and fuel resources by providing a systematic geological framework, by defining settings favourable to mineral and fuel occurrences and by appraising foreign resources. The department is concerned with use and conservation of resources and preservation of the environment. The survey provides information on land resources and terrain performance derived from studies of earth and rock materials, land forms and associated dynamic processes.

The department also carries out geophysical work of interest to the mineral industry. It collects and publishes maps and charts on the geomagnetic field in Canada. Most of this information is obtained from airborne geomagnetic surveys which have ranged over all of Canada and as far as Scandinavia. The branch maintains a network of permanent magnetic observatories. It also operates a network of seismic stations to study the earth's interior and assess seismic risk. In gravity research, another means of studying the composition of the earth's crust, the department maps variations in gravity on a regional basis including the Arctic and the continental shelves. Geothermal studies in mines and deep boreholes provide information to the mineral industry on underground thermal conditions, including permafrost.

The department has completed topographical mapping of the country at the medium scale of 1:250,000, or about 2.5 km to the centimetre. About 52% of the larger-scale mapping at 1:50,000 of more settled areas and those of greater economic importance has been completed. Also available for selected areas are maps at other scales. Another department function is establishment of a basic network of survey control points across Canada that provide precise figures of latitude, longitude and elevation above sea level. Topographic maps, multicoloured maps for other government agencies, aeronautical charts and the National Atlas of Canada are also produced. The air photo library has on file over 4 million aerial photographs of Canada, both black and white and colour, taken over the last half-century from aircraft and more recently from space satellites.

The department also controls, under the Canada Explosives Act, the manufacture, authorization, storage, sale, importation and transportation by road of explosives. It is also responsible for research programs and policies in the field of non-renewable resources. It conducts fundamental and applied resource-engineering-economic research and field investigation into non-renewable resource problems on a total industry basis, in a regional, national and international context. Activities include the publication of reports; regional studies of the mineral economy in Canada; assessment of mineral projects for which federal support has been requested; resource and reserve studies in a number of mineral commodities; and the safeguarding of Canadian mineral interests through participation in the work of international agencies. The sector publishes extensively and maintains a listing of about 16,000 mineral showings and deposits in Canada that may be consulted by the public.

A policy-making group appraises trends in oil and gas exploration and production, transportation, processing and marketing in Canada and abroad, and provides information to federal government agencies, industry and the public on oil and gas developments. In the field of uranium, it co-ordinates matters in the areas of

stockpiling, establishment of enrichment facilities and export. With respect to coal, it provides research and development grants and advises on production expansion rates in the light of profitability and projected demand. The department also administers federal interests in offshore mineral resources as well as in federally owned mineral rights in the provinces.

Tax incentives to the mining industry. Although mineral industry enterprises are subject to federal income tax, certain benefits granted to them under the Income Tax Act serve as incentives to exploration and development. Some general information is included in the sub-section on corporation income tax in Chapter 22 of this edition. The most up-to-date information on income tax allowances which apply to the mining industry may be obtained from Revenue Canada, Taxation and appropriate provincial tax offices.

Provincial government aid

12.7.2

The provincial mines, energy, minerals and natural resources departments provide the following services in support of exploration and mining activities: geological, geochemical and geophysical surveys and reports and maps.

Newfoundland. The mines and energy department provides programs of surveying and of mineral assessment to encourage development of mineral resources; inspection of exploration work and mining operations; control of removal of beach sand and gravel as a conservation measure; identification of mineral rock specimens; technical advice; co-operation with the geological survey and other federal government agencies; and publication of data. Reports, maps and compilations of general data pertaining to specific areas are available at nominal cost. Other information from unclassified files is available to interested parties. Prospectors' or miners' permits are issued and mining claims are recorded.

Nova Scotia. The mines department inspects mines, quarries and allied processing plants, development sites and storage facilities for explosives. Diamond drills are available to exploration and producing companies on a contract basis and industry is assisted in surface and subsurface development and construction projects. The department administers all matters relating to mineral rights, carries out mine rescue and first aid training, and conducts surveys and studies of occurrences of specific minerals, publishing the results in annual and specific reports, including maps. An analytical and ore dressing section, affiliated with Nova Scotia Technical College, provides a service to both the department and industry.

New Brunswick. The natural resources department administers safety regulations, inspects mines and associated plants, conducts mine rescue training, and prepares mineral statistics reports and reviews of mining operations. It provides the mineral (including petroleum) and construction industries with basic data to assist in the discovery, development and utilization of the province's mineral resources. The administration of Crown-owned mineral, petroleum-gas, bituminous shale and granular aggregate resources includes issuing prospecting licences, recording mining claims and issuing mining licences and leases. Regional offices and core libraries are maintained at Sussex, Fredericton and Bathurst. Reports and maps pertaining to exploration work filed for assessment credit are kept in these offices and are available to the public.

Quebec. The natural resources department undertakes a study of the province and produces detailed area reports and maps. It controls the mining rights granted on Crown lands; registers mining claims; issues development permits or special permits governing sale or rental of lands for mining purposes; and ensures that holders of mining rights carry out development work prescribed.

The department is concerned with optimum use of Quebec's mineral resources in line with both development and conservation. It identifies and promotes projects that lend themselves to tangible results in development of mineral resources and arranges studies on marketing, financing, transportation, development and exploitation techniques, profitability and other criteria affecting mineral resource development. The

department inspects working conditions in mines, quarries and mills and carries out whatever engineering work is required to open up new mining areas or operations, including building of access roads and mining townsites. It also collects mining duties and is involved in metallurgical research and development.

Ontario. The natural resources ministry promotes and regulates the use of available supplies of minerals by the resource products industries of Ontario. It assumes the development and optimal utilization of provincial mineral resources and equitable mining tax assessment by in-depth research in mineral economies and policy options.

The department encourages exploration through surveys of the province, publication of maps and reports on mineral occurrences, and education of prospectors and others involved in mineral exploration. It is also responsible for a mineral exploration assistance program designed to stimulate exploration in the Red Lake, Geraldton-Beardmore, Kirkland Lake, Cobalt-Gowganda, Atikokan and Eastern Ontario areas. One-third of the cost of exploration to a maximum of \$33,333 is provided to small- and medium-sized companies to explore in these areas and by March 1978 there were 379 contracts written.

The lands administration branch, mining lands section, which is separate from the mines function, maintained responsibility for recording mining claims, assessment and preparation of title to mining lands.

Manitoba. The mines, natural resources and environment department records staking and acquisition of Crown mineral rights; compiles assessment information and inspects mineral rights dispositions; compiles data on mineral occurrences; issues reports and maps covering surveys; operates an analytical and assay laboratory to help evaluation of mineral occurrences and classification of rocks and minerals; gives engineering approval of mining works and inspects mining operations with regard to the health and safety of employees; controls in-plant environmental and safety regulations; trains mine rescue crews; and inspects mine rescue facilities and oil well drilling sites. The department also is responsible for renewable resources.

Saskatchewan. The mineral resources department is responsible for: the disposition, development and conservation of all Crown minerals except petroleum, natural gas, helium and oil shale; reclamation of land disturbed by mining operations; environmental aspects of mining operations; and engineering studies of long-term effects of mining. It also carries out fundamental activities pertinent to the evaluation of the province's mineral potential and is responsible for conservation, engineering and environmental management functions with regard to oil, natural gas and pipelines and for development, production, disposition and conservation of potash resources and taxation related to these resources.

The department analyzes and makes recommendations on policies governing the optimum management of mineral and energy resources. Such policies relate to mineral and energy development, utilization, marketing, pricing, further processing, ownership, and public revenue. Alternate energy research and forecasts of energy and mineral commodity production and consumption are monitored.

Research, information and education programs have been designed to help citizens save energy at home and at work. The office of energy conservation co-ordinates the energy saving measures of other government agencies of the province.

Alberta. The energy and natural resources department is responsible for energy resources, mineral resources, forest resources, and public lands. It manages the government's 10% equity participation in the Syncrude project; monitors the financial agreements between the Alberta government and its Syncrude partners; is responsible for all the Syncrude project agreements; and participates in management of the project.

Departmental duties include policy formulation for the exercise of ministerial discretion and the administration of the Mines and Minerals Act; and the calculation, collection and verification of mineral production royalties, fees, rentals and taxes on minerals or mineral lands.

Among other responsibilities are resource appraisal; mapping and photogrammetry; co-ordination of integrated natural resource planning; forest land management; and

administration of the public lands within the department's jurisdiction by virtue of the Public Lands Act and of the Agricultural and Recreational Land Ownership Act and regulations.

The Alberta energy resources conservation board administers statutes and regulations dealing with energy resource and environmental management functions regarding petroleum, natural gas, oil sands, pipelines, electric energy and coal. It is responsible for reserves appraisal; regulation of exploration, development, pipelines, and transmission lines; safety regulations; waste prevention; protection of correlative rights; appraisal of productive capacities, provincial requirements, and extra-provincial markets; recording and reporting statistics; and advising government. Its programs and responsibilities are co-ordinated with those of the departments of environment and of energy and natural resources in environmental and land-use matters.

The Alberta research council is engaged in the study and inventory of Alberta's geology and mineral resources. It maintains a research program which includes self-initiated projects, projects requested by other government agencies, and contracted research for industry.

British Columbia. The energy, mines and petroleum resources ministry assists in the orderly development of the energy and mineral sectors through administration of statutes respecting minerals, monitoring of industry activity, and providing incentives for exploration and development of new sources of energy and minerals. It is responsible for an energy policy, the British Columbia Hydro and Power Authority, British Columbia Petroleum Corporation, and British Columbia Energy Commission.

The department provides safety, engineering, and environmental inspection services pertaining to the exploration, development, and production of coal, metal and other mining activities. The ministry also provides regional and applied geological, economic, statistical, and laboratory services to industry and government; provides various financial incentive programs for mineral exploration and development; and administers the disposition of titles and other forms of tenure on Crown mineral lands.

Under the Petroleum and Natural Gas Act and related regulations every well location must be approved before drilling begins. All drilling and production operations are inspected to ensure compliance with regulations governing facilities and practices. Complaints of property damage are investigated and records of all drilling and producing operations are published or made available for study. Samples of bit cuttings and core from every well drilled are retained for study, and detailed reservoir engineering and geological studies are carried out. Estimates of oil reserves and natural gas are made annually. Crown-owned oil and natural gas rights are evaluated prior to disposition by public tender.

Mining legislation

12.8

Federal and departmental jurisdictions

12.8.1

Mineral rights vested in the Crown in right of Canada include those in Yukon and Northwest Territories and those underlying certain federal lands in the provinces. In 1979 the federal government acknowledged provincial claims to offshore mineral rights underlying eastern coastal waters within Canada's continental limits.

With respect to western coastal waters, the issue of control of offshore minerals with British Columbia had not yet been resolved. The Supreme Court of Canada in its opinion of November 1967 stated that, as between Canada and the province of British Columbia, Canada has proprietary rights in and legislative jurisdiction over "lands, including the mineral and other natural resources, of the seabed and subsoil seaward from the ordinary low-water mark on the coast of the mainland and the several islands of British Columbia, outside the harbours, bays, estuaries and other similar inland waters, to the outer limit of the territorial sea of Canada, as defined in the Territorial Sea and Fishing Zones Act. . . ." The court also said the federal government has legislative jurisdiction "in respect of the mineral and other natural resources of the seabed and subsoil beyond that part of the territorial sea of Canada. . . to a depth of 200 metres or,

beyond that limit, to where the depth of the superjacent waters admits of the exploitation of the mineral and other natural resources of the said areas. . . ."

The energy, mines and resources department is responsible for administration and enforcement of legislation and regulations relating to mineral resources off Canada's coasts, in the Hudson Bay and Hudson Strait regions, and for federally owned mineral rights that become available for development in the provinces. The Indian affairs and northern development department is responsible for mineral rights in Yukon and Northwest Territories and in Canada's Arctic offshore regions.

Mineral rights of Indian reserves in the provinces are administered by the Indian affairs department in consultation with Indian band councils. Rights to a reserve may be taken up only after the band has approved development through a referendum vote. The minerals are then administered under special oil and gas or mining regulations. The Indian oil and gas regulations allow disposal of rights by public tender in permits or leases. The mining regulations provide for disposal on terms negotiated with the Indian band council.

12.8.2 Federal mining laws and regulations

Mining exploration and development is carried out in Yukon under the Yukon Quartz Mining Act and the Yukon Placer Mining Act. In the Northwest Territories, including Arctic coastal waters, operations are governed by the Canada mining regulations. Regulations for dredging, coal mining and quarrying are common to both territories. In Yukon, mining rights may be acquired by staking claims. A one-year lease may be obtained to prospect for the purposes of placer mining, renewable for two additional one-year periods; a 21-year lease, renewable for a like period, may be obtained under the quartz mining act.

Under Canada mining regulations, a prospector must be licensed. Staked claims must be converted to lease or relinquished within 10 years. In certain areas, a system of exploration over large areas is allowed by permit. Any individual 18 years of age or any joint-stock company incorporated or licensed to do business in Canada may hold a prospector's licence. No lease is granted to an individual unless the applicant is a Canadian citizen and will be the beneficial owner of the interest acquired. No lease is granted to a corporation unless it is incorporated in Canada and at least 50% of the issued shares are owned by Canadian citizens or the shares are listed on a recognized Canadian stock exchange. Any new mine beginning production is not required to pay royalties for 36 months.

An exploration assistance fund for petroleum and other minerals in the territories was established in 1966. Assistance to a single applicant is limited in aggregate to \$50,000, but not exceeding 40% of the approved cost of an exploration program. Assistance is available only to Canadian citizens or companies incorporated in Canada. It is designed to encourage investment from Canadian sources not previously attracted to investment in northern exploration operations.

12.8.3 Provincial mining laws and regulations

In general, all Crown mineral lands within provincial boundaries (with the exception of those in Indian reserves, national parks and other lands under federal jurisdiction) are administered by provincial governments. The exception is Quebec where mining rights on federal lands are administered by the province.

The granting of land in any province except Ontario no longer automatically carries with it mining rights upon or under such land. In Ontario, mineral rights are expressly reserved if they are not to be included. In Nova Scotia, no mineral rights belong to the owner of the land except those pertaining to gypsum, agricultural limestone and building materials, and deposits of either limestone or building materials may be declared to be minerals. Such declaration is based on economic value or the public interest. In such case, the initial privilege of acquiring the declared minerals lies with the owner of the surface rights who must then conform with the requirements of the mining act. In Newfoundland, mineral and quarry rights are expressly reserved. Some early grants in British Columbia, Alberta, Saskatchewan, Manitoba, New Brunswick, Quebec and Newfoundland also included certain mineral rights. Otherwise, mining rights must

be obtained separately by lease or grant from the provincial authority. Mining activities may be classified as placer, general minerals (or veined minerals and bedded minerals), fuels (coal, petroleum and gas) and quarrying. Provincial mining regulations under these divisions are summarized in the following paragraphs.

In most provinces where placer deposits occur, regulations define the size of placer holdings, the terms under which they may be acquired and the royalties to be paid.

General minerals are sometimes described as quartz, lode, or minerals in place. The most elaborate laws and regulations apply in this division. In all provinces except Alberta, Saskatchewan and Manitoba, a prospector's or miner's licence, valid for one year, must be obtained to search for mineral deposits, the licence being general in some areas but limited in others; a claim of promising ground of a specified size may then be staked. In British Columbia a licence is required only for staking and any number of dispositions may be staked under one licence. A claim must be recorded within a time limit and payment of recording fees made, except in Quebec where no fees are required. Work to a specified value per year must be performed on the claim for a period up to 10 years except in Quebec, where a development licence may be renewed on a yearly basis; in Manitoba and Saskatchewan no work commitment is required in the first year of the claim. The maximum life of a prospecting licence in Nova Scotia is six years continuous from the date of issue, after which the operator is expected to go to lease with a productive deposit. In Quebec and Nova Scotia a specified cost of work must be performed; any excess amount expended may be applied to subsequent renewals of the development licence. The taxation applied most frequently is a percentage of net profits of producing mines or royalties. In Saskatchewan, subsurface mineral regulations covering non-metallics stipulate the size and type of dispositions that may be made and the required expenditures for work to maintain the disposition in good standing, provide for fees, rentals and royalties, and set out the rights and obligations of the holder.

Coal, petroleum and natural gas. In provinces where coal occurs, specifications include the size of holdings, conditions of work and rental under which they may be held. In Quebec, the search for petroleum and natural gas may be carried out under an exploration licence followed by an operating lease; the exploration licence covers a period of five years and an area of not over 24 282 ha (hectares), whereas the operating lease extends over a 20-year period and an area not less than 202 ha or more than 2023 ha. In Nova Scotia, mining rights to certain minerals, including petroleum, occurring under differing conditions may be held by different licensees. Provision is sometimes made for royalties. Acts or regulations govern methods of production. In the search for petroleum and natural gas, an exploration permit or reservation is usually required; however, in Saskatchewan, Alberta and British Columbia leases usually follow the exploration reservation or permit when a discovery of oil or gas is made. In Alberta, exploration costs are applicable in part on the first year's lease rental; in Manitoba they may be applied to the lease rental for a period up to three years; in British Columbia credit is given for up to the first 24 months rental; and in Saskatchewan credit is initially given for up to three years rental, having regard to the amount of excess credit established. In other provinces, discovery of oil or gas is usually prerequisite to obtaining a lease or grant of a limited area, subject to carrying out drilling obligations and paying a rental, a fee, or a royalty on production.

Quarrying regulations define the size of holdings and the terms of lease or grant. In Nova Scotia, sand deposits of a quality suitable for uses other than building purposes and limestone deposits of metallurgical grade belong to the Crown; gypsum deposits belong to the owner of the property. In New Brunswick, quarriable substances (ordinary stone, building and construction stone, sand, gravel, peat and peat moss) are vested in the owner of the land; a shore area lying outside Crown land may be subject to the Quarriable Substances Act; and no person shall take or remove more than 0.383 m³ (cubic metres) of a quarriable substance from Crown land or a designated shore area without a permit or lease. On Quebec public lands and on those granted to individuals after January 1, 1966, the stone, sand and gravel, like other building materials, belong to the Crown; quarries located on land granted to individuals before 1966 belong to the

owners of the surface; the right to exploit all building materials except sand and gravel may be acquired by ordinary staking-out and the right to work sand and gravel beds is set by regulation. In Saskatchewan, sand and gravel on the surface and all sand and gravel obtainable by stripping off the overburden or other surface operation belong to the owner of the land. In Alberta, sand, gravel, clay and marl recovered by excavating from the surface belong to the owner of the land. British Columbia, Manitoba and Saskatchewan have made provision for participation by the Crown in future mineral development. Such participation may be by association, joint venture or otherwise, usually through a Crown corporation. Copies of mining legislation including regulations and other details may be obtained from provincial authorities concerned.

Sources

- 12.1 - 12.7.1 Minerals and Metals Division, Mineral Policy Sector, Department of Energy, Mines and Resources.
- 12.7.2 Resources and Development Division, Mineral Policy Sector, Department of Energy, Mines and Resources.
- 12.8 - 12.8.3 Financial and Fiscal Analysis Division, Economic and Policy Analysis Sector, Department of Energy, Mines and Resources.

Tables

..	not available	e	estimate
—	not appropriate or not applicable	p	preliminary
--	nil or zero	r	revised
--	too small to be expressed		
certain tables may not add due to rounding			
million = 10 ⁶ , billion = 10 ⁹ , trillion = 10 ¹²			

12.1 Value of mineral production, 1886-1978

Year	Total value \$'000	Value per capita \$	Year	Total value \$'000	Value per capita \$	Year	Total value \$'000	Value per capita \$
1886	10,221	2.23	1925	226,583	24.38	1965	3,714,861	189.11
1890	16,763	3.51	1930	279,874	27.42	1970	5,722,059	268.68
1895	20,506	4.08	1935	312,344	28.84	1973	8,369,515	379.69
1900	64,421	12.15	1940	529,825	46.55	1974 ^r	11,753,466	525.55
1905	69,079	11.51	1945	498,755	41.31	1975 ^r	13,345,370	587.98
1910	106,824	15.29	1950 ¹	1,045,450	76.24	1976	15,692,843	682.52
1915	137,109	17.18	1955	1,795,311	114.37	1977	18,472,528	794.25
1920	227,860	26.63	1960	2,492,510	139.48	1978	19,661,339	837.33

¹Value of Newfoundland production included from 1950.

12.2 Value of mineral production, by class, 1970-78 (thousand dollars)

Year	Metallics	Non-metallics	Fuels	Structural materials	Total
1970	3,073,344	480,538	1,717,731	450,446	5,722,059
1971	2,940,287	500,827	2,014,410	507,168	5,962,692
1972	2,955,655	513,488	2,367,554	571,329	6,408,026
1973	3,850,072	614,523	3,227,142	677,778	8,369,515
1974	4,820,675	895,891	5,201,723	835,177 ^r	11,753,466 ^r
1975	4,793,853	939,180	6,653,355	958,982 ^r	13,345,370 ^r
1976	5,314,585	1,162,352	8,109,112	1,106,794	15,692,843
1977	5,987,886	1,362,468	9,872,812	1,249,362	18,472,528
1978 ^p	5,519,569	1,553,878	11,232,543	1,355,349	19,661,339

12.3 Quantity indexes of production of the principal mining industries, 1969-78 (1971=100)

Mining industry	1969 ^r	1970 ^r	1971	1972 ^r	1973 ^r	1974 ^r	1975 ^r	1976 ^r	1977	1978
Metal mines	88.4	105.4	100.0	97.8	110.3	110.5	101.1	106.4	109.4	87.0
Placer gold and gold quartz	118.2	105.3	100.0	90.9	81.1	69.9	71.2	74.6	73.6	71.6
Iron	91.9	116.1	100.0	89.3	114.9	112.9	109.7	135.6	131.3	94.0
Other metal mines	85.3	103.0	100.0	100.3	110.5	111.9	100.5	100.7	105.7	86.1
Non-metal mines (except coal)	92.8	95.0	100.0	100.8	108.5	124.6	105.5	117.9	129.9	122.7
Asbestos	89.8	95.2	100.0	102.0	104.6	110.4	75.9	104.4	107.8	90.0
Mineral fuels	80.8	92.6	100.0	118.5	134.3	128.2	118.7	111.5	113.9	113.6
Coal	68.4	87.5	100.0	148.3	160.6	158.4	201.7	193.8	209.4	230.3
Crude oil and natural gas	81.7	93.0	100.0	116.1	132.1	125.7	111.9	104.8	106.1	104.1
Total, mines (incl. milling) quarries and oil wells	86.9	98.7	100.0	107.4	120.5	119.2	108.9	110.2	114.3	104.4

12.4 Quantity and value of mineral production, 1977 and 1978

22.4 Quantity and value of mineral production, 1977-1978P					
Mineral		1977		1978P	
		Quantity '000	Value \$ '000	Quantity '000	Value \$ '000
METALLICS					
Antimony	kg	...	5,987,886	...	5,519,569
Bismuth	"	164	9,159	158	7,647
Cadmium	"	1 185	2,247	965	1,341
Calcium	"	491	8,232	588	5,940
Cobalt	"	1 485	1,801	1 163	2,708
Columbium (Cb ₂ O ₅)	"	2 509	18,770	2 535	27,140
Copper	"	759 423	12,870	657 521	13,412
Gold	g	53 921	1,162,697	52 875	1,078,636
Indium	"	1 120	272,331	...	375,054
Iron ore	t	53 621	1,375,566	39 622	1,149,890
Iron, remelt	"	...	79,305	...	79,550
Lead	kg	280 955	195,000	308 327	250,301
Magnesium	"	7 633	17,767	8 269	19,638
Mercury	"	...	...	...	...
Molybdenum	"	16 568	150,582	14 068	169,939
Nickel	"	232 512	1,212,568	130 055	652,040
Platinum group	g	14 475	61,988	8 678	55,672
Selenium	kg	161	6,461	123	4,647
Silver	"	1 314	207,801	1 206	238,883
Tantalum (Ta ₂ O ₅)	"	...	...	...	...
Tellurium	"	35	1,415	27	1,365
Tin	"	328	3,546	375	6,054
Tungsten (WO ₃)	"	2 284	...	...	...
Uranium (U ₃ O ₈)	"	6 824	349,219	9 440	588,657
Yttrium (Y ₂ O ₃)	"	...	...	...	...
Zinc	"	1 070 515	838,561	1 032 358	791,055
NON-METALLICS					
Asbestos	t	1 517	1,362,468	...	1,553,878
Barite	"	...	563,532	1 380	601,631
Diatomite	"	...	2,836	88	1,850
Feldspar	"	...	...	...	...
Fluorspar	"	...	8,685	...	...
Gemstones	kg	...	915	...	936
Gypsum	t	7 234	31,376	7 889	36,760
Helium	m ³	...	...	...	...
Magnesian dolomite and brucite	t	...	6,290	...	6,034
Nepheline syenite	"	575	11,984	579	13,100
Nitrogen	m ³	...	...	...	...
Peat	t	386	28,257	404	30,145
Potash (K ₂ O)	"	5 764	403,707	6 375	492,963
Pyrite, pyrrhotite	"	24	197	9	72
Quartz	"	2 317	19,310	1 983	19,743
Salt	"	6 039	90,076	6 222	104,042
Soapstone, talc, pyrophyllite	"	72	2,260	67	2,658
Sodium sulphate	"	395	20,450	378	19,474
Sulphur, in smelter gas	"	736	14,164	673	13,635
Sulphur, elemental	"	5 207	80,608	5 868	100,168
Titanium dioxide	"	...	77,821	...	110,667
FUELS					
Coal	t	28 520	9,872,812	...	11,232,543
Natural gas	m ³	91 517 960	609,517	30 273	733,350
Natural gas byproducts	"	16 703	3,422,070	87 527 871	3,881,585
Petroleum, crude	"	76 579	969,725	14 824	957,168
	"	...	4,871,500	74 502	5,660,440
STRUCTURAL MATERIALS					
Clay products	"	...	1,249,362	...	1,355,349
Cement	t	9 640	103,361	...	107,279
Lime	"	1 900	420,086	10 777	481,405
Sand and gravel	"	262 905	64,467	2 069	74,452
Stone	"	120 163	364,881	265 978	375,415
	"	...	296,567	111 997	316,798
Total		...	18,472,528	...	19,661,339

12.5 Percentage of the total value contributed by principal minerals, 1969-78

Mineral	1969	1970	1971	1972	1973	1974 ^r	1975 ^r	1976 ^r	1977	1978 ^p
METALLICS^a	50.2	53.7	49.3	46.1	46.0	41.0	35.9	33.9	32.4	28.1
Copper	12.4	13.6	12.7	12.5	13.8	11.9	7.7	7.0	6.3	5.5
Gold	2.0	1.5	1.3	1.9	2.3	2.2	2.0	1.3	1.5	1.9
Iron ore	9.6	10.3	9.3	7.6	7.2	6.2	6.9	7.8	7.4	5.8
Lead	2.0	2.2	1.8	1.8	1.5	1.1	1.2	0.8	1.1	1.3
Molybdenum	1.1	1.0	0.6	0.7	0.6	0.5	0.5	0.6	0.8	0.9
Nickel	10.2	14.5	13.4	11.2	9.7	8.3	8.2	7.3	6.6	3.3
Platinum group	0.7	0.8	0.7	0.5	0.5	0.5	0.4	0.3	0.3	0.3
Silver	1.8	1.4	1.2	1.2	1.4	1.7	1.3	1.1	1.1	1.2
Uranium	1.1	...	...	...	...	...	...	1.5	1.9	3.0
Zinc	7.8	7.0	7.0	7.5	7.8	7.4	6.5	5.2	4.5	4.0
NON-METALLICS^a	9.5	8.4	8.4	8.0	7.3	7.6	7.0	7.4	7.4	7.9
Asbestos	4.1	3.6	3.4	3.2	2.8	2.6	2.0	2.9	3.1	3.1
Gypsum	0.3	0.2	0.3	0.3	0.3	0.2	0.2	0.1	0.2	0.2
Nepheline syenite	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Potash	1.5	1.9	2.3	2.1	2.1	2.6	2.7	2.3	2.2	2.5
Quartz	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1
Salt	0.6	0.6	0.7	0.6	0.6	0.5	0.4	0.5	0.5	0.5
Sodium sulphate	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1
Sulphur, in smelter gas	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Sulphur, elemental	1.3	0.5	0.4	0.3	0.3	0.6	0.7	0.4	0.4	0.5
Titanium dioxide	0.6	0.6	0.7	0.6	0.6	0.4	0.4	0.5	0.4	0.6
FUELS^a	31.0	30.0	33.8	37.0	38.6	44.3	49.9	51.7	53.4	57.1
Coal	1.1	1.5	2.0	2.4	2.1	2.6	4.4	3.9	3.3	3.7
Natural gas	5.5	5.5	5.7	6.2	5.4	6.2	11.4	16.9	18.5	19.7
Petroleum, crude	21.4	20.2	22.7	24.5	26.8	30.0	28.2	25.8	26.4	28.8
STRUCTURAL MATERIALS	9.3	7.9	8.5	8.9	8.1	7.1	7.2	7.0	6.8	6.9
Clay products	1.0	0.9	0.8	0.8	0.7	0.6	0.6	0.6	0.6	0.6
Cement	3.4	2.7	3.1	3.3	2.9	2.4	2.5	2.4	2.3	2.4
Lime	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.4	0.3	0.4
Sand and gravel	2.6	2.3	2.6	2.8	2.6	2.2	2.3	2.1	2.0	1.9
Stone	1.9	1.5	1.6	1.6	1.5	1.5	1.5	1.5	1.6	1.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

^aIncludes minor items not specified.

12.6 Value of mineral production, by province, 1969-78 (thousand dollars)

Year	Province or territory						
	Newfound- land (incl. Labrador)	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba
1969	256,936	452	58,562	94,593	717,156	1,222,172	246,275
1970	353,261	640	58,159	104,791	803,286	1,593,039	332,214
1971	343,431	978	60,083	107,233	766,473	1,554,777	330,060
1972	290,659	1,097	57,522	120,171	785,962	1,535,683	323,292
1973	374,418	1,680	60,808	164,178	935,530	1,854,695	414,013
1974 ^r	448,559	1,454	82,686	216,584	1,221,505	2,434,579	489,321
1975 ^r	550,958	1,787	101,626	231,656	1,230,486	2,353,908	530,237
1976	745,029	1,684	127,231	238,579	1,492,902	2,711,758	511,388
1977	867,146	1,863	159,426	289,393	1,674,927	2,980,082	563,733
1978 ^p	611,357	1,901	203,717	306,254	1,822,264	2,595,352	463,991
	Saskat- chewan	Alberta	British Columbia	Yukon	Northwest Territories	Canada	
1969	344,625	1,205,308	433,633	35,403	119,171	4,734,284	
1970	379,190	1,395,994	490,158	77,512	133,814	5,722,059	
1971	409,956	1,640,508	540,527	93,111	115,555	5,962,692	
1972	409,889	1,978,750	677,883	106,781	120,337	6,408,026	
1973	509,773	2,760,227	978,037	150,667	165,489	8,369,515	
1974 ^r	791,409	4,516,679	1,156,102	171,538	223,050	11,753,466	
1975 ^r	862,161	5,749,818	1,296,234	230,150	206,349	13,345,370	
1976	974,291	6,934,383	1,606,192	124,792	224,614	15,692,843	
1977	1,207,562	8,576,327	1,686,511	209,898	255,660	18,472,528	
1978 ^p	1,553,504	9,749,382	1,817,669	228,176	307,772	19,661,339	

12.7 Value of metallics, non-metallics, fuels and structural materials produced, by province, 1977 and 1978 (thousand dollars)

Year and province or territory	Metallics	Non-metallics	Fuels	Structural materials	Total
1977					
Newfoundland (incl. Labrador)	810,087	42,105	—	14,954	867,146
Prince Edward Island	—	—	—	1,863	1,863
Nova Scotia	—	40,925	77,575	40,926	159,426
New Brunswick	238,583	10,038	6,333	34,439	289,393
Quebec	781,459	520,782	—	372,686	1,674,927
Ontario	2,436,140	89,642	16,894	437,406	2,980,082
Manitoba	441,704	6,079	40,433	75,517	563,733
Saskatchewan	119,940	431,326	621,761	34,535	1,207,562
Alberta	10	92,473	8,366,271	117,573	8,576,327
British Columbia	781,557	81,604	703,887	119,463	1,686,511
Yukon	161,966	47,494	438	—	209,898
Northwest Territories	216,440	—	39,220	—	255,660
Canada, 1977	5,987,886	1,362,468	9,872,812	1,249,362	18,472,528
1978					
Newfoundland (incl. Labrador)	577,568	17,820	—	15,969	611,357
Prince Edward Island	—	—	—	1,901	1,901
Nova Scotia	—	44,977	113,600	45,140	203,717
New Brunswick	250,329	10,371	8,538	37,016	306,254
Quebec	780,532	647,025	—	394,707	1,822,264
Ontario	1,989,074	97,481	26,440	482,357	2,595,352
Manitoba	330,818	6,683	43,632	82,858	463,991
Saskatchewan	267,291	520,296	730,893	35,024	1,553,504
Alberta	—	114,154	9,511,489	123,739	9,749,382
British Columbia	853,258	62,667	765,106	136,638	1,817,669
Yukon	195,772	32,404	—	—	228,176
Northwest Territories	274,927	—	32,845	—	307,772
Canada, 1978	5,519,569	1,553,878	11,232,543	1,355,349	19,661,339

12.8 Detailed mineral production, by province, 1977 and 1978 (thousands)

Mineral		Province or territory					
		Newfoundland (incl. Labrador)		Nova Scotia		New Brunswick	
		1977	1978P	1977	1978P	1977	1978P
METALLICS	\$	810,087	577,568	—	—	238,583	250,329
Antimony	kg	—	—	—	—	—	—
	\$	—	—	—	—	6,639	5,590
Bismuth	kg	—	—	—	—	146	136
	\$	—	—	—	—	2,059	1,156
Cadmium	kg	76	3	—	—	1	—
	\$	525	18	—	—	8	—
Calcium	kg	—	—	—	—	—	—
	\$	—	—	—	—	—	—
Cobalt	kg	—	—	—	—	—	—
	\$	—	—	—	—	—	—
Columbium (Cb ₂ O ₃)	kg	—	—	—	—	—	—
	\$	—	—	—	—	—	—
Copper	kg	9 119	11 101	—	—	12 017	10 711
	\$	13,973	18,211	—	—	18,413	17,570
Gold	g	448	498	—	—	290	218
	\$	2,261	3,610	—	—	1,466	1,551
Indium	g	—	—	—	—	—	—
	\$	—	—	—	—	—	—
Iron ore	t	26 658	15 831	—	—	—	—
	\$	742,132	504,973	—	—	—	—
Iron, remelt	t	—	—	—	—	—	—
	\$	—	—	—	—	—	—
Lead	kg	11 097	8 123	—	—	55 525	70 877
	\$	7,702	6,595	—	—	38,537	57,539
Magnesium	kg	—	—	—	—	—	—
	\$	—	—	—	—	—	—
Mercury	kg	—	—	—	—	—	—
	\$	—	—	—	—	—	—
Molybdenum	kg	—	—	—	—	—	—
	\$	—	—	—	—	—	—
Nickel	kg	—	—	—	—	—	—
	\$	—	—	—	—	—	—
Platinum group	g	—	—	—	—	—	—
	\$	—	—	—	—	—	—

12.8 Detailed mineral production, by province, 1977 and 1978 (thousands) (continued)

Mineral	Province or territory					
	Newfound- land (incl. Labrador		Nova Scotia		New Brunswick	
	1977	1978P	1977	1978P	1977	1978P
METALLICS (concluded)						
Selenium	kg	—	—	—	—	—
Silver	\$	18	15	—	152	179
Tantalum (Ta ₂ O ₅)	\$	2,833	3,048	—	24,041	35,429
Tellurium	kg	—	—	—	—	—
Tin	\$	—	—	—	—	—
Tungsten (WO ₃)	kg	—	—	—	—	—
Uranium (U ₃ O ₈)	\$	—	—	—	—	—
Yttrium (Y ₂ O ₃)	kg	—	—	—	—	—
Zinc	\$	—	—	—	—	—
	kg	51 908	53 655	—	188 198	171 604
	\$	40,661	41,113	—	147,420	131,494
NON-METALLICS						
Asbestos	\$	42,105	17,820	40,925	44,977	10,038
	t	65	27	—	—	10,371
Barite	\$	29,450	12,539	—	—	—
	t	—	—	—	—	—
Diatomite	\$	—	1,647	1,050	—	—
	t	—	—	—	—	—
Feldspar	\$	—	—	—	—	—
	t	—	—	—	—	—
Fluorspar	\$	—	—	—	—	—
	t	—	—	—	—	—
Gemstones	\$	8,685	—	—	—	—
	kg	—	—	—	—	—
Gypsum	\$	—	—	—	—	—
	t	603	831	5 079	5 375	47
Helium	\$	3,214	4,580	20,817	23,653	376
	m ³	—	—	—	—	379
Magnesitic dolomite and brucite	\$	—	—	—	—	—
	t	—	—	—	—	—
Nepheline syenite	\$	—	—	—	—	—
	t	—	—	—	—	—
Nitrogen	\$	—	—	—	—	—
	m ³	—	—	—	—	—
Peat	\$	—	—	—	—	—
	t	—	—	—	—	—
Potash (K ₂ O)	\$	—	11	11	104	107
	t	—	713	720	8,447	8,732
Pyrite, pyrrhotite	\$	—	—	—	—	—
	t	—	—	—	—	—
Quartz	\$	—	—	—	—	—
	t	—	—	—	—	—
Salt	\$	—	230	315	250	105
	t	—	—	852	913	—
Soapstone, talc, pyrophyllite	\$	—	17,433	19,234	—	—
	t	—	—	—	—	—
Sodium sulphate	\$	756	471	—	—	—
	t	—	—	—	—	—
Sulphur, in smelter gas	\$	—	—	—	—	—
	t	—	—	—	—	—
Sulphur, elemental	\$	—	—	—	46	57
	t	—	—	—	965	1,155
Titanium dioxide	\$	—	—	—	—	—
	t	—	—	—	—	—
FUELS						
Coal	\$	—	77,575	113,600	6,333	8,538
	t	—	2 165	2 504	278	281
Natural gas	\$	—	77,575	113,600	6,250	8,450
	m ³	—	—	—	2 436	2 351
Natural gas byproducts	\$	—	—	—	43	42
	m ³	—	—	—	—	—
Petroleum, crude	\$	—	—	—	1	1
	m ³	—	—	—	40	46
STRUCTURAL MATERIALS						
Clay products	\$	14,954	15,969	40,926	45,140	34,439
	\$	550	569	4,547	4,718	1,894
Cement	\$	—	—	—	—	—
	t	—	—	—	—	—
Lime	\$	5,175	5,440	11,245	14,341	14,711
	t	—	—	—	—	—
Sand and gravel	\$	—	—	—	—	—
	t	4 467	4 627	9 011	9 067	2,151
Stone	\$	7,023	7,650	18,215	18,491	5 378
	t	617	635	1 974	2 087	6,141
	\$	2,206	2,310	6,919	7,590	3 092
	\$	—	—	—	—	3 175
Total 1977	\$	867,146	—	159,426	—	289,393
Total 1978P	\$	—	611,357	—	203,717	—
	\$	—	—	—	—	306,254

12.8 Detailed mineral production, by province, 1977 and 1978 (thousands) (continued)

Mineral		Province or territory					
		Quebec		Ontario		Manitoba	
		1977	1978P	1977	1978P	1977	1978P
METALLICS	\$	781,459	780,532	2,436,140	1,989,074	441,704	330,818
Antimony	kg	—	—	—	—	—	—
Bismuth	kg	—	—	—	—	—	—
Cadmium	kg	122	166	603	453	51	34
Calcium	\$	846	1,020	4,188	2,788	352	212
Cobalt	kg	—	—	491	588	—	—
	\$	—	—	1,802	2,708	—	—
Columbium (Cb ₂ O ₃)	kg	—	—	1,263	904	222	259
	\$	—	—	16,053	19,562	2,717	7,578
Copper	kg	2,509	2,535	—	—	—	—
	\$	12,870	13,412	—	—	—	—
Copper	kg	109,632	88,704	279,936	194,340	60,132	60,580
	\$	167,994	145,515	427,980	318,807	92,143	99,378
Gold	g	14,981	14,463	23,019	22,052	1,528	1,524
	\$	75,661	102,515	116,260	156,490	7,719	10,740
Indium	g	—	—	—	—	—	—
	\$	—	—	—	—	—	—
Iron ore	t	16,198	13,798	10,320	9,425	—	—
	\$	338,261	338,900	287,811	295,437	—	—
Iron, remelt	t	—	—	—	—	—	—
	\$	79,305	79,550	—	—	—	—
Lead	kg	131	227	8,138	6,570	436	565
	\$	91	184	5,649	5,333	303	458
Magnesium	kg	—	—	7,633	8,269	—	—
	\$	—	—	17,767	19,638	—	—
Mercury	kg	—	—	—	—	—	—
	\$	—	—	—	—	—	—
Molybdenum	kg	1,046	813	—	—	—	—
	\$	9,006	9,270	—	—	—	—
Nickel	kg	—	—	179,995	97,396	52,517	32,659
	\$	—	—	927,518	489,616	285,050	162,424
Platinum group	g	—	—	14,475	8,678	—	—
	\$	—	—	61,988	55,672	—	—
Selenium	kg	93	74	53	31	12	14
	\$	3,711	2,809	2,129	1,188	475	513
Silver	kg	93	73	524	421	30	28
	\$	14,707	14,479	82,938	83,382	4,670	5,509
Tantalum (Ta ₂ O ₅)	kg	—	—	—	—	—	—
	\$	—	—	—	—	—	—
Tellurium	kg	24	19	8	5	2	2
	\$	983	962	325	267	82	91
Tin	kg	—	—	141	111	—	—
	\$	—	—	1,634	1,790	—	—
Tungsten (WO ₃)	kg	—	—	—	—	—	—
	\$	—	—	—	—	—	—
Uranium (U ₃ O ₈)	kg	—	—	4,278	5,252	—	—
	\$	—	—	250,689	341,097	—	—
Yttrium (Y ₂ O ₃)	kg	—	—	—	—	—	—
	\$	—	—	—	—	—	—
Zinc	kg	99,606	93,853	295,420	254,873	61,523	57,310
	\$	78,024	71,916	231,409	195,299	48,193	43,915
NON-METALLICS	\$	520,782	647,025	89,642	97,481	6,079	6,683
Asbestos	t	1,253	1,216	7	—	—	—
	\$	416,129	509,431	730	—	—	—
Barite	t	—	—	375	380	—	—
	\$	—	—	—	—	—	—
Diatomite	t	—	—	—	—	—	—
	\$	—	—	—	—	—	—
Feldspar	t	—	—	—	—	—	—
	\$	—	—	—	—	—	—
Fluorspar	t	—	—	—	—	—	—
	\$	—	—	—	—	—	—
Gemstones	kg	—	—	90	110	—	—
	\$	—	—	699	724	136	161
Gypsum	t	—	—	3,991	4,209	611	767
	\$	—	—	—	—	—	—
Helium	m ³	—	—	—	—	—	—
	\$	—	—	—	—	—	—
Magnesian dolomite and brucite	t	—	—	—	—	—	—
	\$	6,290	6,034	—	—	—	—
Nepheline syenite	t	—	—	575	579	—	—
	\$	—	—	11,984	13,100	—	—
Nitrogen	m ³	—	—	—	—	—	—
	\$	—	—	—	—	—	—
Peat	t	150	159	7	7	39	41
	\$	8,257	8,925	608	664	3,699	3,825
Potash (K ₂ O)	t	—	—	—	—	—	—
	\$	—	—	—	—	—	—
Pyrite, pyrrhotite	t	24	9	—	—	—	—
	\$	197	72	—	—	—	—
Quartz	t	722	684	1,043	767	290	230
	\$	9,154	8,948	6,129	5,961	1,587	2,008
Salt	t	—	—	4,586	4,674	27	10
	\$	—	—	57,141	66,495	165	52
Soapstone, talc, pyrophyllite	t	—	—	—	—	—	—
	\$	844	1,090	660	1,097	—	—

12.8 Detailed mineral production, by province, 1977 and 1978 (thousands) (continued)

Mineral		Province or territory					
		Quebec		Ontario		Manitoba	
		1977	1978P	1977	1978P	1977	1978P
NON-METALLICS (concluded)							
Sodium sulphate	t	—	—	—	—	—	—
Sulphur, in smelter gas	t	100	92	378	269	—	—
Sulphur, elemental	\$	2,090	1,858	7,929	5,458	—	—
Titanium dioxide	t	—	—	—	7	17	31
FUELS	\$	77,821	110,667	—	—	—	—
Coal	t	—	—	16,894	26,440	40,433	43,632
Natural gas	\$	—	—	—	—	—	—
Natural gas byproducts	\$	—	—	241 523	310 700	—	—
Petroleum, crude	\$	—	—	10,267	19,194	—	—
	\$	—	—	—	—	—	—
	\$	—	—	98	94	630	593
	\$	—	—	6,627	7,246	40,433	43,632
STRUCTURAL MATERIALS							
Clay products	\$	372,686	394,707	437,406	482,357	75,517	82,858
Cement	\$	16,988	16,904	56,252	57,655	2,673	2,693
Lime	t	2 550	2 956	3 657	3 942	591	679
	\$	98,032	117,292	139,894	156,420	29,412	34,447
Sand and gravel	t	330	345	1 258	1 387	—	—
	\$	11,261	12,525	41,600	48,922	2,766	3,273
Stone	t	74 423	71 776	75 400	79 832	14 535	14 969
	\$	69,586	64,398	121,776	132,000	29,363	30,195
	t	78 426	67 999	28 869	30 481	3 023	3 175
	\$	176,819	183,588	77,884	87,360	11,303	12,250
Total 1977	\$	1,674,927	—	2,980,082	—	563,733	—
Total 1978P	\$	—	1,822,264	—	2,595,352	—	463,991
		Saskatchewan		Alberta		British Columbia	
		1977	1978P	1977	1978P	1977	1978P
METALLICS							
Antimony	\$	119,940	267,291	10	—	781,557	853,258
Bismuth	kg	—	—	—	—	396	454
	\$	—	—	—	—	2,520	2,057
Cadmium	kg	—	—	—	—	19	22
Calcium	\$	10	13	—	—	188	185
Cobalt	kg	72	77	—	—	321	296
Columbium (Cb ₂ O ₅)	\$	—	—	—	—	2,227	1,825
Copper	kg	—	—	—	—	—	—
	\$	—	—	—	—	—	—
Gold	kg	7 227	6 123	—	—	275 226	274 632
	\$	11,075	10,045	—	—	421,719	450,524
Indium	g	527	435	2	—	5 999	6 376
	\$	2,663	3,045	10	—	30,297	45,204
Iron ore	g	—	—	—	—	1 120	—
Iron, remelt	\$	—	—	—	—	—	—
Lead	t	—	—	—	—	445	568
	\$	—	—	—	—	7,362	10,580
Magnesium	t	—	—	—	—	—	—
	\$	—	—	—	—	—	—
Mercury	kg	—	—	—	—	78 173	71 251
Molybdenum	\$	—	—	—	—	54,257	57,842
Nickel	kg	—	—	—	—	—	—
Platinum group	\$	—	—	—	—	—	—
Selenium	g	—	—	—	—	—	—
Silver	\$	3	4	—	—	—	—
	kg	146	137	—	—	—	—
Tantalum (Ta ₂ O ₅)	\$	10	8	—	—	242	212
	\$	1,535	1,516	—	—	38,205	41,923
Tellurium	kg	—	—	—	—	—	—
Tin	\$	—	—	—	—	—	—
	kg	1	1	—	—	—	—
Tungsten (WO ₃)	\$	25	45	—	—	—	—
	kg	—	—	—	—	187	264
Uranium (U ₃ O ₈)	\$	—	—	—	—	1,912	4,264
	kg	—	—	—	—	—	—
Yttrium (Y ₂ O ₃)	\$	2 546	4 188	—	—	—	—
	\$	98,530	247,560	—	—	—	—
Zinc	kg	—	—	—	—	—	—
	\$	7 525	6 350	—	—	103 781	102 035
	\$	5,894	4,866	—	—	81,294	78,185

12.8 Detailed mineral production, by province, 1977 and 1978 (thousands) (continued)

Mineral		Province or territory					
		Saskatchewan		Alberta		British Columbia	
		1977	1978P	1977	1978P	1977	1978P
NON-METALLICS	\$	431,326	520,296	92,473	114,154	81,604	62,667
Asbestos	t	—	—	—	—	97	73
	\$	—	—	—	—	69,729	47,257
Barite	t	—	—	—	—	814	420
	\$	—	—	—	—	—	—
Diatomite	t	—	—	—	—	—	—
	\$	—	—	—	—	—	—
Feldspar	t	—	—	—	—	—	—
	\$	—	—	—	—	—	—
Fluorspar	t	—	—	—	—	—	—
	\$	—	—	—	—	—	—
Gemstones	kg	—	—	—	—	825	826
	\$	—	—	—	—	669	741
Gypsum	t	—	—	—	—	2,367	3,172
	\$	—	—	—	—	—	—
Helium	m ³	—	—	—	—	—	—
	\$	—	—	—	—	—	—
Magnesitic dolomite and brucite	t	—	—	—	—	—	—
	\$	—	—	—	—	—	—
Nepheline syenite	t	—	—	—	—	—	—
	\$	—	—	—	—	—	—
Nitrogen	m ³	—	—	—	—	—	—
	\$	—	—	—	—	—	—
Peat	t	5	5	29	29	42	45
	\$	378	429	2,319	2,700	3,836	4,150
Potash (K ₂ O)	t	5 764	6 375	—	—	—	—
	\$	403,707	492,963	—	—	—	—
Pyrite, pyrrhotite	t	—	—	—	—	—	—
	\$	—	—	—	—	—	—
Quartz	t	122	118	—	—	19	19
	\$	208	210	1,461	1,755	206	206
Salt	t	255	273	318	352	—	—
	\$	8,153	9,258	7,184	9,003	—	—
Soapstone, talc, pyrophyllite	t	—	—	—	—	—	—
	\$	—	—	—	—	—	—
Sodium sulphate	t	—	—	—	—	—	—
	\$	18,624	17,096	1,826	2,378	—	—
Sulphur, in smelter gas	t	—	—	—	—	213	255
	\$	—	—	—	—	3,180	5,164
Sulphur, elemental	t	11	14	5 153	5 767	42	86
	\$	256	340	79,683	98,318	647	1,472
Titanium dioxide	t	—	—	—	—	—	—
	\$	—	—	—	—	—	—
FUELS	\$	621,761	730,893	8,366,271	9,511,489	703,887	765,106
Coal	t	5 479	4 990	12 014	13 063	8 585	9 435
	\$	20,330	18,900	210,408	240,600	294,954	351,800
Natural gas	m ³	1 452 652	1 643 015	78 084 615	76 329 167	10 968 313	8 723 955
	\$	13,534	15,564	3,110,319	3,557,781	252,544	261,769
Natural gas byproducts	m ³	140	144	16 180	14 350	383	330
	\$	7,479	8,129	940,553	928,588	21,693	20,451
Petroleum, crude	m ³	9 763	9 646	63 725	62 147	2 224	1 872
	\$	580,418	688,300	4,104,991	4,784,520	134,696	131,086
STRUCTURAL MATERIALS	\$	34,535	35,024	117,573	123,739	119,463	136,638
Clay products	\$	3,066	3,092	10,518	10,532	6,873	8,810
Cement	t	345	339	1 087	1 164	910	1 132
	\$	20,367	20,202	55,942	60,308	45,308	57,161
Lime	t	—	—	130	141	59	64
	\$	—	—	4,727	5,099	1,962	2,467
Sand and gravel	t	9 135	9 253	23 900	24 313	45 789	45 813
	\$	11,102	11,730	45,658	46,900	54,154	55,550
Stone	t	—	—	224	272	3 938	4 173
	\$	—	—	728	900	11,166	12,650
Total 1977	\$	1,207,562	—	8,576,327	—	1,686,511	—
Total 1978P	\$	—	1,553,504	—	9,749,382	—	1,817,669
		Yukon		Northwest Territories		Canada	
		1977	1978P	1977	1978P	1977	1978P
METALLICS	\$	161,966	195,772	216,440	274,927	5,987,886	5,519,569
Antimony	kg	—	—	—	—	9,159	7,647
	\$	—	—	—	—	165	158
Bismuth	kg	—	—	—	—	2,247	1,341
	\$	—	—	—	—	1 185	965
Cadmium	kg	2	—	—	—	8,232	5,940
	\$	11	—	3	—	491	588
Calcium	kg	—	—	—	—	1,802	2,708
	\$	—	—	—	—	1 485	1 163
Cobalt	kg	—	—	—	—	18,770	27,140
	\$	—	—	—	—	2 509	2 535
Columbium (Cb ₂ O ₃)	kg	—	—	—	—	12,870	13,412
	\$	—	—	—	—	759 423	657 521
Copper	kg	5 843	11 012	291	318	1,162,697	1,078,636
	\$	8,954	18,066	446	520	—	—

12.8 Detailed mineral production, by province, 1977 and 1978 (thousands) (continued)

Mineral		Province or territory					
		Yukon		Northwest Territories		Canada	
		1977	1978P	1977	1978P	1977	1978P
METALLICS (concluded)							
Gold	g	922	1 026	6 205	6 283	53 921	52 875
Indium	\$	4,656	7,354	31,337	44,545	272,330	375,054
Iron ore	g	—	—	—	—	1 120	..
Iron, remelt	t	—	—	—	—	53 621	39 622
Lead	t	—	—	—	—	1,375,566	1,149,890
Magnesium	kg	68 622	80 643	58 833	70 071	79 305	79 550
Mercury	\$	47,628	65,466	40,833	56,884	280 955	308 327
Molybdenum	kg	—	—	—	—	195,000	250,301
Nickel	\$	—	—	—	—	7 633	8 269
Platinum group	kg	—	—	—	—	17,767	19,638
Selenium	\$	—	—	—	—	—	—
Silver	kg	—	—	—	—	16 568	14 068
Tantalum (Ta ₂ O ₅)	\$	—	—	—	—	150,582	169,939
Tellurium	kg	—	—	—	—	232 512	130 055
Tin	\$	—	—	—	—	1,212,568	652,040
Tungsten (WO ₃)	g	—	—	—	—	14 475	8 678
Uranium (U ₃ O ₈)	kg	—	—	—	—	61,988	55,672
Yttrium (Y ₂ O ₃)	\$	—	—	—	—	161	123
Zinc	kg	—	—	—	—	6,461	4,647
Asbestos	\$	127	148	118	122	1 314	1 206
Barite	kg	20,155	29,405	18,717	24,192	207,801	238,883
Diatomite	\$	—	—	—	—	..	..
Feldspar	kg	—	—	—	—	35	27
Fluorspar	\$	—	—	—	—	1,415	1,365
Gemstones	kg	—	—	—	—	328	375
Gypsum	\$	—	—	2 284	..	3,546	6,054
Helium	kg	—	—	..	..	2 284	..
Magnesite	\$	—	—	—	—	6 824	9 440
Nepheline	kg	—	—	—	—	349,219	588,657
Potash (K ₂ O)	\$	—	—	—	—	..	—
Pyrite, pyrrhotite	kg	102 847	98 506	159 709	194 172	1 070 517	1 032 358
Quartz	\$	80,562	75,481	125,104	148,786	838,561	791,055
Salt	\$	47,494	32,404	—	—	1,362,468	1,553,878
Soapstone, talc, pyrophyllite	t	96	64	—	—	1 518	1 380
Sodium sulphate	\$	47,494	32,404	—	—	563,532	601,631
Sulphur, in smelter gas	t	—	—	—	—	..	88
Sulphur, elemental	\$	—	—	—	—	2,836	1,850
Titanium dioxide	t	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
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	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—	—
	\$	—	—	—			

12.8 Detailed mineral production, by province, 1977 and 1978 (thousands) (concluded)

Mineral		Province or territory					
		Yukon		Northwest Territories		Canada	
		1977	1978P	1977	1978P	1977	1978P
FUELS	\$	438	—	39,220	32,845	9,872,812	11,232,543
Coal	t	—	—	—	—	28 521	30 273
	\$	—	—	—	—	609,517	733,350
Natural gas	m ³	8 895	—	759 526	518 683	91 517 960	87 527 871
	\$	438	—	34,925	27,235	3,422,070	3,881,585
Natural gas byproducts	m ³	—	—	—	—	16 703	14 824
	\$	—	—	—	—	969,725	957,168
Petroleum, crude	m ³	—	—	138	149	76 579	74 502
	\$	—	—	4,295	5,610	4,871,500	5,660,440
STRUCTURAL MATERIALS	\$	—	—	—	—	1,249,362	1,355,349
Clay products	\$	—	—	—	—	103,361	107,279
Cement	t	—	—	—	—	9 640	10 777
	\$	—	—	—	—	420,086	481,405
Lime	t	—	—	—	—	1 900	2 069
	\$	—	—	—	—	64,467	74,452
Sand and gravel	t	—	—	—	—	262 903	265 978
	\$	—	—	—	—	364,881	375,415
Stone	t	—	—	—	—	120 163	111 997
	\$	—	—	—	—	296,567	316,798
Total 1977	\$	209,898	—	255,660	—	18,472,528	—
Total 1978P	\$	—	228,176	—	307,772	—	19,661,339

¹Includes 865 000 tonnes of sand and gravel valued at \$1,863,000 in Prince Edward Island.

²Includes 885 000 tonnes of sand and gravel valued at \$1,901,000 in Prince Edward Island.

12.9 Producers' shipments of copper, by province, and total value, 1971-78

Year	Province or territory					
	Newfoundland t	Nova Scotia t	New Brunswick t	Quebec t	Ontario t	Manitoba t
1971	12 682	15	9 313	167 669	274 306	50 135
1972	8 630	—	9 354	160 056	262 832	54 279
1973	7 844	3	9 353	143 191	260 656	64 712
1974	5 654	5	11 369	144 234	283 897	71 083
1975	7 500	—	11 212	117 556	257 778	64 495
1976	7 427	—	10 271	112 733	260 198	54 602
1977	9 119	—	12 017	109 632	279 936	60 132
1978	11 101	—	10 711	88 704	194 340	60 580
	Saskatchewan t	British Columbia t	Yukon t	Northwest Territories t	Canada Shipments t	Value \$ '000
1971	10 111	127 287	2 328	625	654 471	760,016
1972	11 382	211 834	793	514	719 674	806,427
1973	9 275	317 605	10 517	787	823 943	1,157,507
1974	7 987	287 549	9 111	492	821 381	1,402,571
1975	7 905	258 518	8 487	375	733 826	1,030,502
1976	9 528	265 105	10 642	424	730 930	1,101,109
1977	7 227	275 226	5 843	291	759 423	1,162,698
1978	6 123	274 632	11 012	318	657 521	1,078,636

12.10 Producers' shipments of nickel, by province, and total value, 1971-78

Year	Quebec t	Ontario t	Manitoba t	Saskatchewan t	British Columbia t	Yukon t	Canada Quantity t	Value \$ '000
1971	679	195 729	69 461	—	1 154	—	267 023	800,064
1972	277	171 846	60 080	—	1 470	1 276	234 949	717,485
1973	328	178 395	67 660	—	1 119	1 545	249 047	813,101
1974	—	209 051	59 331	—	689	—	269 071	974,594
1975	—	179 095	63 085	—	—	—	242 180	1,100,523
1976	—	187 436	53 389	—	—	—	240 825	1,146,480
1977	—	179 995	52 517	—	—	—	232 512	1,212,568
1978	—	97 396	32 659	—	—	—	130 055	652,040

12.11 Iron ore shipments and production of pig iron and steel ingots and castings, 1971-78

Year	Iron ore shipments					Production of pig iron '000 t	Production of steel ingots and castings '000 t
	Newfoundland (incl. Labrador) '000 t	Quebec '000 t	Ontario '000 t	British Columbia '000 t	Canada Quantity '000 t Value \$ '000		
1971	19 846	11 219	10 141	1 751	42 957 555,136	7 834	11 047
1972	16 395	10 537	10 664	1 139	38 735 489,023	8 488	11 854
1973	22 133	12 674	11 271	1 420	47 498 606,106	9 547	13 304
1974	22 027	12 545	10 906	1 307	46 785 724,150	9 452	13 568
1975	22 586	11 501	9 504	1 302	44 893 918,065	9 228	12 944
1976	27 970	17 754	10 369	809	56 902 1,241,263	9 801	13 326
1977	26 658	16 198	10 320	445	53 621 1,375,566	9 661	13 631
1978	15 831	13 798	9 425	568	39 622 1,149,890	10 338	14 898

12.12 Producers' shipments of lead from Canadian ores, by province, and total value, 1971-78

Year	Province or territory					
	Newfoundland t	Nova Scotia t	New Brunswick t	Quebec t	Ontario t	
1971	12 230	376	59 334	587	8 088	
1972	11 069	—	41 268	1 520	9 621	
1973	7 660	264	39 926	1 226	10 429	
1974	14 052	197	47 829	958	9 173	
1975	5 219	—	59 092	1 644	6 192	
1976	12 886	—	65 059	814	6 906	
1977	11 097	—	55 525	131	8 138	
1978	8 123	—	70 877	227	6 570	
	Manitoba t	British Columbia t	Yukon t	Northwest Territories t	Canada Quantity t Value \$ '000	
1971	182	112 458	98 582	76 035	367 872	109,488
1972	178	88 519	101 116	81 846	335 137	113,990
1973	58	84 892	106 831	90 668	341 954	121,676
1974	40	55 253	90 242	76 525	294 269	134,330
1975	119	70 612	122 864	83 391	349 133	155,973
1976	273	85 408	32 036	52 942	256 324	128,011
1977	436	78 173	68 622	58 833	280 955	195,000
1978	565	71 251	80 643	70 071	308 327	250,301

12.13 Producers' shipments of zinc, by province, and total value, 1971-78

Year	Province or territory					
	Newfoundland t	Nova Scotia t	New Brunswick t	Quebec t	Ontario t	Manitoba t
1971	18 899	—	146 523	158 230	331 780	22 667
1972	24 115	—	158 336	148 092	365 950	41 374
1973	7 888	—	174 690	140 849	414 006	60 233
1974	19 092	—	149 809	125 447	435 502	62 484
1975	32 198	—	149 210	125 241	335 852	64 045
1976	42 498	—	134 733	117 768	317 194	60 563
1977	51 908	—	188 198	99 606	295 420	61 523
1978	53 655	—	171 604	93 853	254 873	57 310
	Saskatchewan t	British Columbia t	Yukon t	Northwest Territories t	Canada Quantity t Value \$ '000	
1971	7 844	138 551	105 748	203 497	1 133 739	418,161
1972	15 082	121 721	107 604	154 103	1 136 377	477,783
1973	12 178	137 381	114 905	164 450	1 226 580	652,944
1974	5 902	77 734	79 151	171 886	1 127 007	867,135
1975	4 539	99 669	115 395	129 002	1 055 151	872,328
1976	7 891	106 500	47 300	147 610	982 057	814,584
1977	7 524	103 781	102 847	159 709	1 070 515	838,561
1978	6 350	102 035	98 506	194 172	1 032 358	791,055

12.14 Producers' shipments of gold, by province, and total value, 1971-78

Year	Province or territory						
	Newfoundland g	Nova Scotia g	New Brunswick g	Quebec g	Ontario g	Manitoba g	Saskatchewan g
1971	228 331	—	131 754	20 118 942	35 270 938	935 064	807 446
1972	437 595	1 306	99 687	16 785 582	31 703 867	1 182 927	949 496
1973	446 179	—	161 800	14 888 612	28 686 830	1 493 682	825 082
1974	360 956	—	133 621	13 702 917	24 917 151	1 634 612	471 404
1975	404 096	93	105 472	14 155 441	23 487 729	1 496 730	454 608
1976	431 405	—	116 731	14 470 644	23 002 483	1 362 146	566 985
1977	447 766	—	290 227	14 980 772	23 019 434	1 528 425	527 297
1978	498 000	—	218 000	14 463 000	22 052 000	1 524 000	435 000
	Alberta g	British Columbia g	Yukon g	Northwest Territories g	Canada		
					Quantity g	Value \$'000	
1971	2 457	2 781 055	450 161	9 590 415	70 316 563	79 903	
1972	93	3 799 570	126 871	9 563 666	64 650 660	119 742	
1973	5 443	5 883 067	648 974	7 747 098	60 786 767	190 376	
1974	3 017	5 041 283	823 371	5 737 565	52 825 897	263 794	
1975	7 651	4 862 656	997 986	5 460 651	51 433 113	270 830	
1976	5 163	5 391 352	1 111 949	6 162 252	52 621 110	208 273	
1977	2 053	5 998 865	921 907	6 204 584	53 921 330	272 331	
1978	—	6 376 000	1 026 000	6 283 000	52 875 000	375,054	

12.15 Producers' shipments of silver, by province, and total value, 1971-78

Year	Average price per kg (Canadian funds) \$	Province or territory					
		Newfoundland kg	Nova Scotia kg	New Brunswick kg	Quebec kg	Ontario kg	Manitoba kg
1971	50.16	17 530	1 720	157 310	136 171	581 064	21 595
1972	53.69	17 820	—	121 505	110 667	609 245	25 143
1973	81.21	17 820	710	110 998	94 897	610 170	33 678
1974	148.83	17 284	784	138 860	92 388	555 272	39 421
1975	144.87	13 841	—	157 049	105 662	463 694	31 153
1976	138.18	17 994	—	192 336	91 555	507 521	25 599
1977	158.18	17 910	—	151 982	92 977	524 324	29 527
1978	198.08	15 000	—	179 000	73 000	421 000	28 000
		Saskatchewan kg	British Columbia kg	Yukon kg	Northwest Territories kg	Canada	
						Quantity kg	Value \$'000
1971	50.16	7 426	238 694	178 774	91 209	1 431 493 ¹	71 797
1972	53.69	11 958	215 424	155 174	126 257	1 393 193	74 803
1973	81.21	14 253	236 990	188 922	168 592	1 477 030 ¹	119 954
1974	148.83	7 005	181 706	180 082	118 728	1 331 531 ¹	198 166
1975	144.87	8 339	196 638	196 943	61 319	1 234 642 ¹	178 864
1976	138.18	10 401	239 538	92 698	103 795	1 281 437	177 074
1977	158.18	9 698	241 526	127 415	118 326	1 313 685	207 801
1978	198.08	8 000	212 000	148 000	122 000	1 206 000	238 883

¹Includes relatively small quantities produced in Alberta.**12.16 Quantity and value of producers' shipments of uranium (U₃O₈), by province, 1971-78**

Year	Ontario		Saskatchewan		Canada	
	Quantity t	Value \$'000	Quantity t	Value \$'000	Quantity t	Value \$'000
1971	3 180	..	546	..	3 726	..
1972	3 823	..	606	..	4 429	..
1973	3 681	..	636	..	4 317	..
1974	3 830	..	521	..	4 351	..
1975	4 794	..	723	..	5 517	..
1976	4 441	186,439	1 972	55,390	6 413	241,829
1977	4 278	250,689	2 546	98,530	6 824	349,219
1978	5 252	341,097	4 188	247,560	9 440	588,657

12.17 Quantity and value of producers' shipments of asbestos, 1971-78

Year	Quantity '000 t	Value \$ '000
1971	1 483	203,999
1972	1 530	206,089
1973	1 690	234,323
1974	1 644	302,013
1975	1 056	267,246
1976	1 536	452,208
1977	1 517	563,532
1978	1 380	601,631

12.18 Producers' shipments of potash, 1971-78

Year	K ₂ O eq. '000 t	Value \$ '000
1971	3 629	134,955
1972	3 494	135,513
1973	4 453	176,876
1974	5 776	308,925
1975	4 673	358,570
1976	5 215	353,504
1977	5 764	403,707
1978	6 375	492,963

12.19 Producers' shipments of salt, by province and total value, 1971-78

Year	Nova Scotia '000 t	Ontario '000 t	Manitoba '000 t	Saskat- chewan '000 t	Alberta '000 t	Canada Quantity '000 t	Value \$ '000
1971	806	3 785	24	190	222	5 027	40,111
1972	738	3 663	28	228	258	4 915	40,144
1973	682	3 776	33	259	299	5 049	49,631
1974	783	4 043	29	269	323	5 447	60,619
1975	768	3 763	27	277	288	5 123	59,714
1976	902	4 489	27	279	297	5 994	84,079
1977	852	4 587	27	255	318	6 039	90,076
1978	913	4 674	10	273	352	6 222	104,042

12.20 Quantity and value of sulphur produced from smelter gases and in pyrite and pyrrhotite shipments, and of elemental sulphur sales, 1971-78

Year	Sulphur in smelter gases		Producers' shipments of pyrite and pyrrhotite			Sales of elemental sulphur ¹	
	Quantity ² '000 t	Value \$ '000	Gross weight ³ '000 t	Sulphur content '000 t	Value \$ '000	Quantity '000 t	Value \$ '000
1971	561	4,632	288	141	1,162	2 857	21,300
1972	616	5,118	114	54	456	3 299	19,588
1973	687	10,070	24	12	173	4 168	23,816
1974	663	9,813	49	24	347	5 033	68,556
1975	695	9,641	21	11	127	4 079	91,847
1976	705	18,582	31	15 ^e	241	4 029	70,171
1977	736	14,164	24	12 ^e	197	5 207	80,608
1978	673	13,635	9	5 ^e	72	5 868	100,168

¹Recovered from sour natural gas and nickel sulphide ores.²Includes sulphur in acid made from roasting zinc sulphide concentrates at Arvida and Port Maitland.³Excludes pyrite and pyrrhotite used to produce iron residues or sinter.**12.21 Producers' shipments of gypsum, by province, and total value, 1971-78**

Year	New- foundland '000 t	Nova Scotia '000 t	New Brunswick '000 t	Ontario '000 t	Manitoba '000 t	British Columbia '000 t	Canada Quantity '000 t	Value \$ '000
1971	509	4 436	70	634	118	313	6 080	15,083
1972	667	5 442	68	659	160	352	7 348	19,336
1973	734	5 605	83	685	172	331	7 610	21,067
1974	504	5 351	79	702	188	400	7 224	22,437
1975	583	3 895	53	631	83	474	5 719	20,304
1976	572	4 154	35	574	100	567	6 002	22,767
1977	603	5 079	47	700	136	669	7 234	31,376
1978	831	5 375	57	724	161	741	7 889	36,760

12.22 Production and exports of nepheline syenite, 1971-78

Year	Production		Exports	
	Quantity '000 t	Value \$ '000	Quantity '000 t	Value \$ '000
1971	469	6,206	372	5,333
1972	508 ^r	5,902	401	5,789
1973	517 ^r	7,860	408	6,138
1974	560	9,179	455	8,023
1975	468	8,869	357 ^r	7,136 ^r
1976	540	10,566	416	8,322
1977	575	11,984	444	9,848
1978	579	13,100	421	10,731

12.23 Producers' shipments and value, imports, exports and apparent consumption of cement, 1971-78

Year	Shipments (sold or used)		Imports '000 t	Exports ¹ '000 t	Apparent consumption ² '000 t
	'000 t	\$'000			
1971	8 234	183,374	51	806	7 479
1972	9 107	210,685	39	1 178	7 968
1973	10 225	241,945	117	1 279	9 063
1974	10 585	281,958	251	1 148	9 688
1975	10 194 ^r	331,524 ^r	421	935	9 680 ^r
1976	9 515	381,614	315	921	8 909
1977	9 640	420,086	258	1 275	8 623
1978	10 777	481,405	220	1 635	9 362

¹Standard portland cement.²Shipments plus imports less exports.**12.24 Producers' shipments of sand and gravel, by province, and total value, 1971-78**

Year	Province or territory						
	New- foundland '000 t	Prince Edward '000 t	Nova Scotia '000 t	New Brunswick '000 t	Quebec '000 t	Ontario '000 t	
1971	5 048	1 410	5 447	4 522	37 743	70 426	
1972	4 929	1 432	8 978	6 859	40 817	69 291	
1973	5 866	1 480 ^r	10 295	8 666	46 759	73 090	
1974	6 144	884	10 503	7 485	60 248	72 561	
1975	6 237	929	8 906	3 834	82 039	69 705	
1976	4 964	789	8 408	5 672	77 156	68 802	
1977	4 468	865	9 012	5 378	74 423	75 400	
1978	4 627	885	9 067	5 443	71 776	79 832	
	Manitoba '000 t	Saskatchewan '000 t	Alberta '000 t	British Columbia '000 t	Canada Quantity '000 t	Value \$'000	
1971	15 145	10 270	16 945	26 538	193 494	152,628	
1972	13 393	7 722	18 648	32 225	204 294	178,100	
1973	11 596	6 202	16 880	30 959	211 794	213,437	
1974	17 272	10 741	22 410	31 048	239 296	236,985	
1975	16 417	8 313	20 453	30 322	247 155	305,181	
1976	16 126	8 619	24 520	34 103	249 159	334,414	
1977	14 535	9 135	23 900	45 789	262 905	364,881	
1978	14 969	9 253	24 313	45 813	265 978	375,415	

12.25 Producers' shipments of stone¹, by province and total value, 1971-78

Year	Province					Ontario '000 t
	New- foundland '000 t	Nova Scotia '000 t	New Brunswick '000 t	Quebec '000 t		
1971	185	1 491	1 298	34 033		25 618
1972	185	950	1 725	37 543		28 206
1973	357	738	2 500	43 686		32 240
1974	617	1 511	2 833	50 014		31 261
1975	877	1 581	3 241	50 763		27 526
1976	365	1 577	3 029	48 861		28 165
1977	617	1 974	3 092	78 426		28 869
1978	635	2 087	3 175	67 999		30 481
	Manitoba '000 t	Alberta '000 t	British Columbia '000 t	Canada Quantity '000 t	Value \$'000	
1971	918	167	2 982	66 692	96,537	
1972	553	178	3 419	72 759	103,326	
1973	567	146	3 475	83 709	128,693	
1974	2 223	163	4 211	92 833	177,207	
1975	969 ^r	235	4 221	89 414 ^r	202,724 ^r	
1976	2 339	358	3 182	87 876	230,638	
1977	3 023	224	3 938	120 163	296,567	
1978	3 175	272	4 173	111 997	316,798	

¹Excludes limestone used in Canadian lime and cement industries.

12.26 Value (total sales) of producers' shipments of clay products made from domestic clays, by province, 1971-78 (thousand dollars)

Year	Province				
	Newfoundland	Nova Scotia	New Brunswick	Quebec	Ontario
1971	80	1,844	627	6,565	30,538
1972	257	1,684	668	8,300	30,484
1973	260	2,101	840	9,725	34,601
1974	436	2,763 ^r	1,244	12,194	37,969
1975 ^r	536	3,382	1,338	14,270	39,482
1976	569	3,900	1,369	14,147	53,390
1977	550	4,547	1,894	16,988	56,253
1978	569	4,718	2,306	16,904	57,635
	Manitoba	Saskatchewan	Alberta	British Columbia	Canada
1971	469	1,140	4,031	4,900	50,194
1972	667	1,758	4,438	4,301	52,557
1973	1,257	2,014	4,782	5,590	61,170
1974	1,366	2,406	5,964	4,732	69,074 ^r
1975 ^r	1,437	3,286	8,793	5,899	78,423
1976	2,594	3,540	10,398	8,551	98,458
1977	2,673	3,065	10,518	6,873	103,361
1978	2,693	3,092	10,532	8,810	107,279

12.27 Quantity and value of production¹ of crude oil, by province, 1971-78

Year	Province or territory							
	New Brunswick		Ontario		Manitoba		Saskatchewan	
	Quantity '000 m ³	Value \$'000	Quantity '000 m ³	Value \$'000	Quantity '000 m ³	Value \$'000	Quantity '000 m ³	Value \$'000
1971	2	13	152	2,727	891	15,413	14 064	217,829
1972	1	12	140	2,499	836	14,588	13 798	214,057
1973	2	14	129	2,866	808	17,148	13 663	264,057
1974	1	11	117	4,342	755	27,164	11 757	397,835
1975	1	51	112	5,046	702	31,445	9 408	407,302
1976	1	42	99	5,216	633	33,553	8 913	444,564
1977	1	40	98	6,627	630	40,433	9 763	580,418
1978	1	46	94	7,246	593	43,632	9 646	688,300
	Alberta		British Columbia		Northwest Territories		Canada	
	Quantity '000 m ³	Value \$'000	Quantity '000 m ³	Value \$'000	Quantity '000 m ³	Value \$'000	Quantity '000 m ³	Value \$'000
1971	59 064	1,055,769	4 016	63,984	150	1,208	78 339	1,356,943
1972	70 625	1,272,903	3 806	63,710	141	1,059	89 347	1,568,828
1973	86 129	1,894,724	3 389	65,643	153	2,240	104 273	2,246,692
1974	81 948	2,985,549	3 012	103,501	152	3,167	97 742	3,521,569
1975	70 332	3,220,636	2 286	94,917	160	4,537	83 001	3,763,934
1976	64 264	3,449,555	2 386	117,497	142	3,461	76 438	4,053,888
1977	63 725	4,104,991	2 224	134,696	138	4,295	76 579	4,871,500
1978	62 147	4,784,520	1 872	131,086	149	5,610	74 502	5,660,440

¹Gross production of crude oil and condensate, less returned to formation.

12.28 Natural gas production¹, by province and total value, 1971-78

Year	Province or territory							
	New Brunswick		Quebec		Ontario		Saskatchewan	
	Quantity '000 m ³	Value \$'000	Quantity '000 m ³	Value \$'000	Quantity '000 m ³	Value \$'000	Quantity '000 m ³	Value \$'000
1971	2 976	91	4 819	25	460 424	6,333	2 015 185	8,952
1972	2 750	57	5 291	26	350 424	4,768	1 951 359	8,932
1973	2 294	31	5 588	28	269 806	3,678	1 865 715	9,044
1974	2 492	44	5 182	27	213 424	3,248	1 745 337	9,001
1975	2 577	55	1 416	8	309 645	6,508	1 738 796	10,449
1976	2 803	60	255	2	140 423	4,860	1 709 828	12,034
1977	2 436	43	—	—	241 523	10,267	1 452 652	13,534
1978	2 351	42	—	—	310 700	19,194	1 643 015	15,564
	Alberta		British Columbia		Northwest Territories		Canada	
	Quantity '000 m ³	Value \$'000	Quantity '000 m ³	Value \$'000	Quantity '000 m ³	Value \$'000	Quantity '000 m ³	Value \$'000
1971	58 537 937	290,672	67 548 151	338,709	71 857 999	388,696	71 854 432	645,138
1972	73 335 204	1,405,247	74 177 999	2,282,404	78 084 615	3,110,319	76 329 167	3,557,781

12.28 Natural gas production¹, by province and total value, 1971-78 (concluded)

Year	Province or territory							
	British Columbia		Yukon		Northwest Territories		Canada	
	Quantity '000 m ³	Value \$'000	Quantity '000 m ³	Value \$'000	Quantity '000 m ³	Value \$'000	Quantity '000 m ³	Value \$'000
1971	9 710 098	36,269	24 610	90	8 427	117	70 764 476	342,549
1972	12 236 623	43 043	73 611	279	333 987	1,372	82 502 196	397,186
1973	13 287 773	46,052	—	—	1 044 127	4,324	88 333 302	451,853
1974	11 491 233	60,581	32 225	190	894 812	5,337	86 239 137	723,766
1975	11 168 874	77,342	53 009	1,310	876 237	19,742	87 485 758	1,520,661
1976	10 701 561	315,980	23 673	979	893 255	32,899	87 649 797	2,649,218
1977	10 968 313	252,544	8 895	438	759 526	34,925	91 517 960	3,422,070
1978	8 723 955	261,769	—	—	518 683	27,235	87 527 871	3,881,585

¹Gross production, less field-flared and waste and re-injected.

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Canada's energy concerns

13.1

International scene

13.1.1

Increasing world concern surrounds the adequacy of future energy supply prompted by growth in energy demand and major dependence on Middle East oil. Rapidly rising oil prices since 1973-74 have created major problems for developing countries and industrialized nations alike.

The need for concerted action by major industrial nations was demonstrated on several occasions in 1979. In March 1979, in direct response to the Iranian oil crisis and subsequent global repercussions, the International Energy Agency (IEA) called on its 20-nation membership to restore a better balance in international oil supply and demand by lowering demands on world energy supplies by 5%, or the equivalent of 317 974 m³ (2 million barrels) of oil a day in 1979, and reducing the upward pressure on international oil prices. Canadian initiatives include a 4% increase in domestic oil production; voluntary conservation programs to decrease domestic demand by 3% in a year; and an expanded home insulation program. In May 1979 IEA countries agreed to extend the 5% reduction program into 1980 and to adopt new longer-term measures to deal with the uncertainties of oil supplies and prices in the decade of the 1980s.

Canada participated in the first full-scale test of the IEA emergency oil-sharing program in 1978. In international energy affairs, Canada is also an active member of such international bodies as the United Nations (UN), the Organization for Economic Co-operation and Development (OECD), and the North Atlantic Treaty Organization (NATO). In 1979 it initiated bilateral negotiations with such oil-producing countries as Venezuela and Mexico for secure supplies of oil in exchange for other energy-related commodities, technologies and services.

October 1979 was designated as the first international energy conservation month by the IEA. Canada's conservation month activities focused on the long-term benefits of energy conservation and the development of international co-operation. As its major contribution to conservation month, Canada hosted the international industrial energy conservation conference in Toronto in early October 1979.

In another display of international solidarity, Canada and six other industrialized nations at the Tokyo economic summit meeting in June 1979 pledged to adhere to a strict energy conservation program in light of new increases in the international price of oil. It was also in Tokyo that Canada made a commitment to move the domestic price of oil toward the world level and limit oil imports to 95 392 m³ (600,000 barrels) a day.

A list of countries from which Canada imports oil, by volume and by value, appears in Table 13.1.

Energy research and development

13.1.2

The office of energy research and development (R&D) in the energy, mines and resources department (EMR) served as a secretariat for a task force on energy R&D, which recommended major increases in federally supported energy R&D, to be implemented in co-operation with provincial governments and industry. New priorities resulted in increases in funding of \$10 million in 1976-77 and again in 1977-78, \$15 million in 1978-79, and over \$5 million in 1979-80, raising the total for energy R&D in 1979-80 to \$152.4 million.

A breakdown of federal expenditures on energy R&D is given in Table 13.2. Initial estimates of provincial expenditures on energy R&D were: \$42 million in 1976-77, \$70 million in 1977-78 and \$85 million in 1978-79.

Renewable energy sources

13.1.3

Government activity in renewable energy resources continued to increase. Federal spending on research rose from \$5.4 million in 1977-78 to \$14.4 million in 1978-79 and

\$19.3 million in 1979-80. Of the \$19.3 million allotted in renewable energy in 1979-80, over half was earmarked for solar energy. Estimated expenditures for R&D in renewable energy for 1980-81 was \$20.7 million.

In 1978 a \$380-million renewable energy and energy conservation program was announced to encourage and demonstrate the use of renewable energy and conservation technology. The program includes assistance to solar equipment manufacturers by providing contracts to help Canadian companies develop and produce solar equipment; purchase by the federal government of solar equipment for its own buildings during the next five years to a total value of \$125 million; an awards program to encourage energy-efficient building designs; grants to industry to encourage the use of wood waste as a source of energy in the forest industries; funds for research on managing forests and developing techniques for converting wood to energy, with a total of \$35 million to be provided over five years; guaranteed loans on projects that generate electricity from wood or municipal waste; and joint federal-provincial agreements to demonstrate the use of renewable energy and energy-saving technologies.

Research studies on the potential of solar and biomass energy, and the economic impact of these new technologies, are being carried out by EMR. Technical and general publications are available and a national advisory committee on conservation and renewable energy was set up to provide independent advice to the minister.

The National Research Council of Canada (NRC) directs research and development in renewable energy. It emphasized development of solar heating systems for the production of service hot water for film processing, laundries and other industrial use in 1978. Activities included testing the performance of solar collectors, and data monitoring and collection.

Prospects for solar energy. About 32% of the total energy demand in Canada is for low-grade heat below 100°C and in principle could be met from heat generated by solar energy, but in practice many obstacles exist, not the least being high initial cost. Other difficulties include the lack of long-lasting commercially available solar panels adapted to the Canadian climate and of significant solar manufacturing industry in Canada; the absence of adequate consumer protection standards or legal guarantees to the access to sunlight; and unfavourable municipal and property tax structures. Because of these institutional rather than purely technical difficulties, it is estimated that solar heating will contribute only 1% or 2% of the total energy budget by the year 2000.

Biomass energy. Another form of renewable energy that appears to hold greater promise in the short term is energy from biomass. Wastes and residues from the forest industry could make that entire industry energy self-sufficient. A key technological step is the wood gasifier, to convert wood particles to a gas that burns with a higher flame temperature than wood itself. Other uses of biomass energy include manufacture of methanol from wood products and efficient use of municipal and agricultural wastes.

Wind energy. An NRC-designed vertical-axis windmill in the Magdalen Islands was commissioned in 1977. It has a peak output of 230 kW, and is intended to supplement the local electrical grid, now powered entirely by diesel generators. Experiments continued in 1979. Use of wind to generate electricity appears to be competitive with conventional energy sources in areas such as the Atlantic provinces, the coastal regions of Hudson Bay and southern Alberta where winds are sufficiently strong and constant to make windmill operation economically feasible or where electricity is being generated by expensive diesel fuel.

Other renewable energy technologies. Other methods include harnessing tidal power in the Bay of Fundy. Producing electricity from this source seems nearly cost-competitive with other methods. At the end of 1979 work was proceeding on a federally sponsored geothermal program on the University of Regina campus, as the first phase of a demonstration program to use subterranean hot water for space heating. Drilling of a 2 214 metre test well took place between December 1978 and February 1979. Drilling and geophysical surveys at Meager Creek, BC are being carried out by EMR and BC Hydro on the feasibility of geothermal power — tapping subterranean steam pockets to generate electricity.

Energy conservation

13.2

A policy paper — *Energy conservation in Canada: programs and perspectives* — in 1977 outlined potential measures to increase the efficiency of energy use. Given the right combination of circumstances, the average annual growth in energy use could be about 2% by 1990.

If, in 1990, the mix of energy sources were the same as that prevailing in 1975, estimates indicate that annual primary energy consumption could be reduced by: petroleum, 1.29 quads (equivalent to the annual output of five Syncrude-size oil sands plants), or about 95 390 m³ (600,000 bbl) a day of crude oil; 0.51 quads of natural gas (equivalent to about 20% of total Canadian production in 1975); as well as 0.79 quads of electric power, equivalent to the annual output of 13 Pickering-size nuclear plants; and 0.21 quads of coal equivalent to 7.7 million tonnes of bituminous coal. [Note: 1 quad = 1 quadrillion Btus (10¹⁵ Btus) = 172 million bbl of crude oil.]

This is not a forecast of energy demand since many economic, social and technological changes may occur by the 1990s. Further conservation savings are possible in some sectors; however, these were not considered since they could not be quantified with sufficient accuracy. Since 1972, primary Canadian energy demand has risen at an average annual rate of 2.8%.

In an industrial energy conservation program, 14 task forces represent specific sectors of industry. They set energy efficiency targets, exchange information on conservation and maintain liaison with the federal government.

In the public sector, the federal government's internal conservation program resulted in an energy reduction of about 9% in 1977-78 with the estimated saving over \$25 million.

In January 1977, assistance programs were undertaken in Prince Edward Island and Nova Scotia because of their high dependence on foreign oil for power generation. Included were grants for home insulation, energy audit buses, and industry consultation and grant programs. Based on the success of the insulation program, a \$1.4 billion national home insulation grant program began in September 1977. In 1977, a special R&D fund of \$1.5 million was created to improve energy efficiency in industrial processes.

A federal-provincial energy bus program assists industry and commerce to identify areas of energy waste and allow remedial action. It uses mobile computer-equipped energy audit vehicles staffed by engineers and technicians performing on-site energy audits. The Prince Edward Island and Nova Scotia programs were carried out in August 1977 and the program was expanded to cover New Brunswick, Quebec, Ontario and British Columbia in July 1978, Newfoundland and Saskatchewan in January 1979 and Alberta in September 1979. On average, these audits have resulted in a 20% energy saving.

The first edition of *Measures for Conservation in New Buildings 1978* prepared by an associate committee on the national building code was published by NRC. While not mandatory for private sector construction, these measures are applied to all new federal government building construction, and have received general acceptance at provincial and industry levels.

A number of steps have been taken by the federal government to conserve energy. Fleet average performance standards for new cars for 1980 and 1985 have been introduced to ensure that total gasoline consumption in Canada in 1985 will be below the level of 1976 even though more cars will probably be on the roads. Provincial governments were urged to adopt a 90 km/h (kilometres an hour) speed limit on most highways and to impose higher registration fees for heavy or large-engined cars. A surtax of \$100 on automobile air conditioners was imposed. Graduated weight taxes for cars and station wagons ranging from \$30 to \$300 are in effect for cars over 2 000 kg (kilograms). Most auto makers and dealers display automobile fuel economy ratings. The federal government collects an excise tax on gasoline, partly to encourage thrift.

Federal sales taxes have been removed on a wide range of energy conserving and renewable energy materials and equipment. Accelerated capital cost allowances are available for specified waste energy recovery. A program of energy labelling for appliances has been initiated.

Energy Conservation in Canada, released in 1977, promotes energy efficiency while reducing the growth rate of consumption. *Financing Energy Self-Reliance* examines capital investment requirements and concludes that the Canadian economy can absorb a total investment of about \$180 billion for new energy development from 1976 to 1990, to achieve the policy objective of self-reliance in energy. A 1979 report, *Energy Futures for Canadians*, deals with the long-term outlook for Canadian energy supply and demand to 2025 in a global context. It concludes that shortages and interruptions of supply of world oil could result in sudden and radical price increases, and possibly bring about socio-political disturbances on a pan-international scale, unless efforts are made to establish new patterns of energy supply and use.

13.3 Energy supply and demand

Canada's energy needs are met by oil, natural gas, coal, uranium and electricity. In primary energy consumption, the share of oil as a source is 44.0%, natural gas 18.6% and coal 8.9%. Some 25.1% of energy needs are met by hydro and 3.4% by nuclear power. Although nuclear power accounts for a small proportion, it is expected to become increasingly important. Hydroelectricity and thermal generation from coal are expected to decline as nuclear power development increases and by the end of the century probably no more than 50% of primary energy consumption will be met by natural gas and oil.

The relative importance of energy sources, in terms of Canada's trade, is shown in Table 13.3. A marked change in the export-import balance ranged from a deficit of \$117 million in 1966, on a trade balance basis, to a surplus of \$1,467 million in 1977 and \$1,878 million in 1978.

Canada's primary energy demand increased at an average annual rate of 5.3% over the period 1960-73, while energy use per capita grew annually by 3.3%. Higher prices, increasing attention to conservation and some economic decline lowered the yearly increase to 2.7% in the period 1974-78, with the annual per capita increase being 2.1%.

Growth in oil use and supply trends since 1965 are illustrated in Table 13.4. Production of crude oil and gas liquids which had increased by about 90% in the 10-year period to 1975 began to decline by 1977 and remained static in 1978. The most notable trend was the decline in the export-import surplus.

Natural gas supply and demand is shown in Table 13.5. In the 12-year period to 1977, production of marketable pipeline gas and domestic demand increased markedly but from 1977 to 1978 exports declined while domestic demand continued to grow.

More than 1,500 companies are involved in the Canadian petroleum industry, excluding a further 5,000 independent gas station operations; however, the top 30 oil producers accounted for 85.8% of Canadian oil production and the top 30 gas producers for 57.3% of gas production in 1977. The degree of concentration has diminished as smaller companies move from exploration to production.

The federal government has taken a number of steps to boost supplies of oil and natural gas. It made large direct investments in oil and gas projects including \$300 million in Syncrude of Canada Ltd., which began producing oil from the Athabasca tar sands in 1978. The project was granted the world price for oil. Through Petro-Canada, the federal government attempted to speed up development at Lloydminster and Cold Lake heavy oil deposits. Development of new technology to tap Western Canada's heavy oil and oil sands resources is a federal priority and includes a \$96.0 million joint research fund with Alberta, and a \$16.1 million heavy oils program undertaken with Saskatchewan.

Construction of a pipeline to move Alberta oil from Sarnia to Montreal, lessening Quebec's dependence on foreign oil, was completed in 1976. By the end of 1978 the line was transporting about 40 000 m³/d of crude oil to the Montreal refining area.

By 1978 it appeared the main future source of Alberta oil would be the costly oil sands and heavy oils. The price of this oil will be higher than the field price of \$92.76 per cubic metre as of January 1, 1978. By world standards Canadian prices remained low.

By agreement with provincial governments, a schedule of increases was established to bring the field price of oil to \$86.48/m³ by July 1979. The schedule was subject to

review. On August 1, 1978 a new Federal-Alberta gas pricing agreement was announced which provided that the ratio of natural gas (on a Btu basis) to crude oil prices in central Canada would not be increased from the 85% level. The agreement was to be effective for one year from August 1, 1978 and resulted in a new wholesale price of natural gas at the Toronto city gate of \$70.62 a thousand cubic metres. After further discussions between the federal and Alberta governments in December 1978, it was agreed that

Oil imports worth nearly \$3.47 billion in 1978 and exports of \$1.57 billion left a deficit of nearly \$1.9 billion. However, a trade surplus in natural gas, electric energy, radioactive ores and other energy-related products gave Canada a positive trade balance in energy of nearly \$1.88 billion.

natural gas prices would remain at the 85% differential and would be increased in step with the two oil price increases scheduled for August 1, 1979 and January 1, 1980. It was agreed that Alberta would make some gas available in new market areas at prices somewhat lower than prevailing domestic market prices. The principal benefit would be to increase Canada's security of energy supply, particularly in Quebec and the Maritimes, and reduce the outflow of dollars for imported oil.

The export price of natural gas, increased to US\$76.28 per thousand cubic metres on September 1, 1977, remained at that level during 1978. In March 1979, the export price was increased to US\$81.20.

Improving prices have contributed significantly to natural gas delivery. Federal funding and fiscal incentives have also been provided for exploration in the Arctic, and studies were undertaken on eventual transportation of Arctic gas to southern markets. These included the possibility of a Canadian link with the Alaska Highway natural gas pipeline, an application for a pipeline from the Arctic islands, participation by Petro-Canada in efforts to ship liquefied Arctic gas to the Atlantic Coast by tanker, and the expansion of Quebec access to western natural gas and extension of service eastward to the Maritime provinces.

Oil and natural gas

13.4

Production

13.4.1

Production of Canadian crude oil and natural gas liquids declined to 247 400 m³/d, 4.3% less than in 1977, as regulated export reductions to the US continued to outpace increased domestic demand. Natural gas sales declined by 2.5% in 1978 and both export and domestic sales declined.

In Alberta in 1978, production of conventional crude oil was up, synthetic crude oil increased and pentanes plus decreased for a total increase of 1 200 m³/d or 1.0%. Saskatchewan crude oil production decreased 7.7% or 2 000 m³/d.

British Columbia crude oil and equivalent production declined by 600 m³/d while Manitoba also was down by 1 000 m³/d. Production of natural gas declined by 4.0%.

Exploration and development

13.4.2

Both exploratory and development drilling achieved record levels in 1978. Some 7,614 wells were drilled during the year, up from 6,844 a year earlier. Details of drilling activity appear in Tables 13.7 and 13.8. The high level of exploration in Canada was more than maintained during 1978, resulting in a record number of discoveries.

Alberta was the major contributor to the total wells drilled, accounting for 80% of total depth drilled. Development drilling increased 21% and exploratory drilling 16%. The upward trend in natural gas exploration and development that began in 1975 continued, accelerating during 1978. Completions rose by 7.7% over 1977 to about 5,470 wells, with continuing development of large, low-yield shallow gas reservoirs of southeastern and northern Alberta.

At least 15 significant deeper zone gas discoveries were also drilled in the foothills and deep basin areas of western Alberta. Some of the most important were in the Elmworth area of west-central Alberta where, since the original discovery was made in 1976, more than 50 successful exploratory wells have been drilled. By mid-1978 the boundaries of the potentially productive area encompassed 2 700 km² and were still expanding with an ultimate reserve potential of 283 billion cubic metres. New oil discoveries in the West Pembina area of central Alberta highlighted the exploration scene. Since the initial discovery was made in an oil-bearing Devonian pinnacle reef in 1977, at least 40 more exploratory wells have struck oil or gas in similar reef structures. Based on an analysis of limited current data, most likely ultimate recoverable reserves in the West Pembina zone could be in the order of 79 million cubic metres, but could possibly be double that if the areal extent of reef development proves greater than anticipated. The West Pembina discovery is undoubtedly the most significant new oil find made in Alberta during 1966-78.

In British Columbia the number of wells drilled and their depth increased substantially. Exploration companies completed the year with 377 wells drilled including 190 potential gas producers. Almost all drilling was restricted to exploration for and development of natural gas. Nevertheless, a significant oil discovery was made in the Eagle area west of Cecil Lake in the Fort St. John region. Oil production was obtained from several formations ranging in age from Devonian to Cretaceous. By the end of 1978, 20 producing oil wells and six gas wells had been completed on this prospect with limits of the producing trend undetermined. Preliminary estimates suggest that this field has the capacity to provide 15% to 20% of the province's future production.

In Saskatchewan both exploratory and development drilling increased substantially in 1978 with most activity confined to the Lloydminster area.

In the Beaufort Sea, Dome Petroleum Ltd. continued a multi-well drilling program in deeper water areas offshore from the Mackenzie Delta. Dome's drilling program began in 1976 and encountered some success, with three potential oil and gas discoveries. Two significant discoveries were recorded during the 1978 drilling season but could not be fully evaluated before Dome had to suspend operations for the year. However, they were to be fully tested in 1979 and plans called for drilling three and possibly five more exploration wells in the same general area. Since all these discoveries are located on large structural features, they may prove to be major-field class discoveries. Dome has identified additional large structural features within the 305-m water depth line that are considered to have excellent potential for oil and gas accumulations. Success in this area would have a major impact on Canada's natural gas supply in the longer term.

Eastern offshore region. Off the East Coast, seven wells were drilled and an eighth suspended in 1978, compared with only two wells drilled in 1977. Petro-Canada, the national oil company, participated in drilling six of them. Two were drilled off the Labrador coast resulting in a significant wet gas discovery off Hopedale. This find, fourth for the area and made by Chevron and Petro-Canada, flowed gas at rates up to 550 000 m³/d and condensate at 80 m³/d from two zones at about 1 900 m depth. The commercial significance of this discovery, still to be determined, was expected to revitalize industry efforts in offshore areas of Eastern Canada. In 1979, a total of nine wells were planned by the five groups of companies having exploration permits in the area.

In the Sable Island area of the Scotian Shelf, Petro-Canada and Mobil continued an evaluation drilling program started in mid-1977 on Mobil's area block, and finished four wells there during 1978, including a successful 2 km west stepout to the 1972 Thebaud wet gas discovery. The purpose of this program was to determine the commercial viability of oil and gas production in the Sable Island area. In May 1979 the fifth and final well in the program, Venture D-23, was declared a significant wet gas discovery. Petro-Canada also participated in drilling a well on the continental slope southeast of Halifax in 866 m of water, the deepest ever drilled off North America.

Exploration expenditures off the East Coast for 1978 totalled about \$75 million, almost five times those of 1977. Costs in 1979 were expected to increase to an estimated \$160 million because of the number of drilling programs.

In oil sands development, Syncrude Canada Ltd.'s oil sands plant came on stream in August 1978. Initial production was 9 540 m³/d. When fully operational, the plant is expected to produce 19 870 m³/d, about 10% of current Canadian conventional crude oil production.

Another tar sands proposal was announced early in 1978 by Shell Canada Ltd. which was instrumental in forming a consortium, the Alsands Project Group. The group of seven oil companies in addition to Shell was formed to bring together the necessary resources. Shell was appointed to negotiate the commercial terms and prepare the application to the Alberta Energy Resources Conservation Board (AERCB). The consortium would be phased into an operating company to construct and operate the Alsands mining plant. The project, approved in 1979, incorporates the best undeveloped mineable orebodies and provides sufficient reserves to double its capacity or prolong its operation. It was expected production would begin in 1986 at initial output of 22 000 m³/d, and bring total synthetic oil production to 48 000 m³/d or 17.5 million cubic metres a year.

In the Lloydminster heavy oil belt straddling the Alberta–Saskatchewan border, Husky Oil Ltd. and another group of companies comprised of Petro-Canada, Gulf Canada Ltd. and the Saskatchewan Oil and Gas Corp. embarked on two separate programs of heavy oil exploration, development and enhanced recovery projects. These exploratory programs were designed to determine whether or not the heavy oil base was large enough to support the operation of a major upgrading facility in the Lloydminster area. Both Husky Oil and the Petro-Canada group expressed interest in constructing upgrading facilities which would process more than 15 898 m³/d of heavy crude oil.

Development of the huge oil sands resources of the Cold Lake area of Alberta, about 290 km east of Edmonton, was also progressing. In 1979, Esso Resources Ltd. received approval from the AERCB to build and operate a major heavy oil recovery and upgrading project near Cold Lake. Initially, the heavy asphaltic oil, too thick to flow in its natural state, would be recovered by a thermal method from a depth of 457 m. Once recovered, the heavy oil would be converted by a new upgrading facility to between 19 000 and 23 000 m³/d of high-grade synthetic crude oil. The synthetic crude oil would be further processed by existing Canadian refineries into a broad range of petroleum products. This project, when completed, would contribute significantly to Canada's petroleum resource base. Cost of the project was estimated at over \$4 billion, and it was expected to be completed by the mid-1980s. In field tests, Esso produced 800 m³/d with the oil being trucked to the Strathcona refinery near Edmonton.

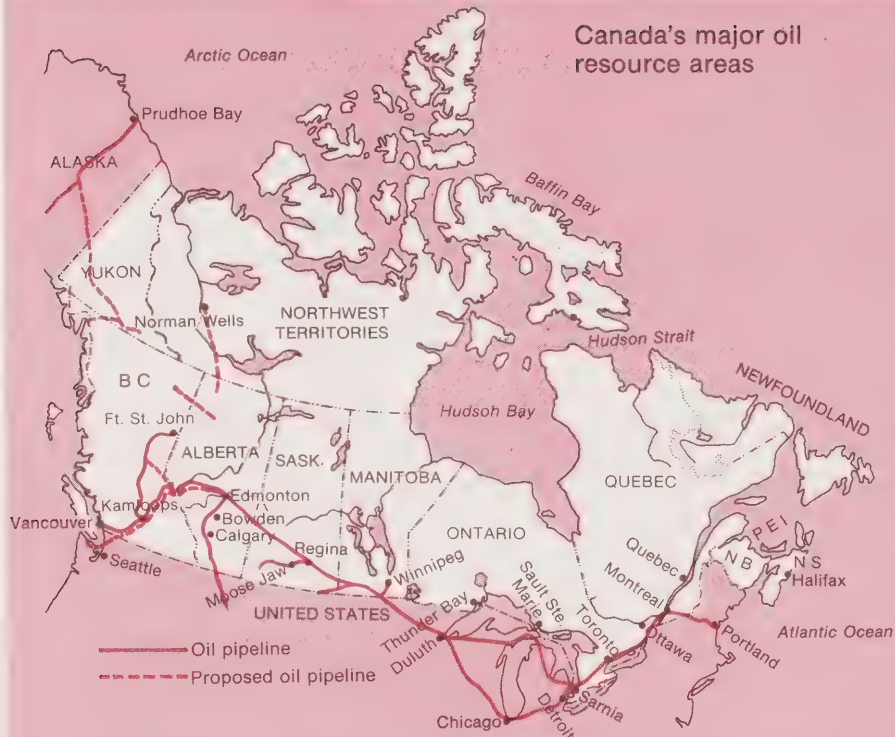
Federal incentives

13.4.3

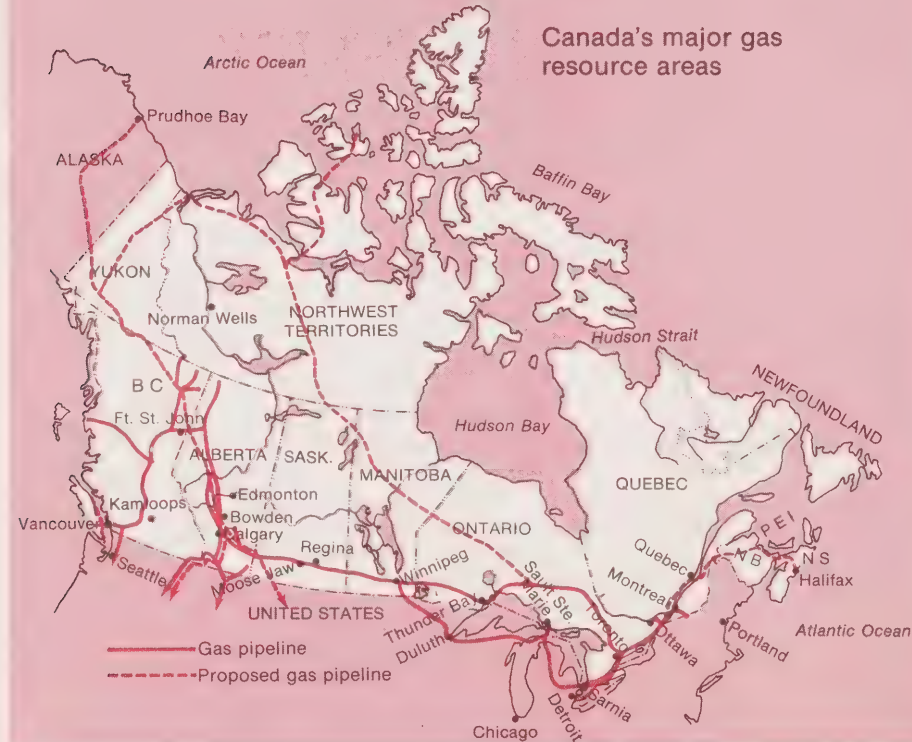
Federal initiatives in taxes and pricing have helped to sustain high levels of activity in the petroleum industry. A special 50% depletion incentive was announced in 1978 for well equipment used in enhanced recovery projects. The frontier depletion allowance for wells costing more than \$5 million continued to have a positive impact on drilling in more remote areas of Canada. Access to world prices was announced for new non-conventional projects, with Syncrude and an expanded Great Canadian Oil Sands becoming the first beneficiaries. These measures, combined with specific provincial incentives and the investment tax credit available to all industries, produced an investment climate suited to accelerated development of new supplies as part of the national policy of reducing dependence on foreign oil imports. Data collected under a petroleum corporations monitoring survey showed that total petroleum related capital expenditures of the industry increased to 93.2% of the internal cash generated in 1978. During 1977, the same reinvestment ratio had been 91.5%.

A strong incentive to exploration has been provided by a revised tax structure. Companies investing new oil or gas revenue in exploration R&D pay taxes at a lower rate. In fact, oil and gas exploration and development expenditures amount to at least 70% of industry cash flows. Since 1975, both federal and provincial tax changes have encouraged exploration investment. Activity has been especially heavy in Alberta where additional supplies of natural gas have been located. A moratorium on proposed progressive incremental royalties for new oil and gas discoveries in the frontier regions was extended until 1982 to encourage the search for new supplies.

Canada's major oil resource areas



Canada's major gas resource areas



Reserves

13.4.4

At the end of 1978 Canada's proven liquid hydrocarbon reserves, including conventional crude oil and natural gas liquids, amounted to 1.32 billion cubic metres made up of approximately 1.0 billion of crude oil and 320 million of natural gas liquids. These estimates do not include oil in the Athabasca bituminous sands. At the 1978 annual production level of 80.7 million cubic metres the life index (reserves-to-production ratio) for conventional crude oil and natural gas liquids was approximately 16 years.

The reserve position of most provinces declined except in Alberta where total reserves including natural gas liquids increased because ethane reserves have been included for the first time. The Canadian Petroleum Association (CPA) estimated Alberta's remaining recoverable reserves of crude oil at 931.6 million cubic metres and natural gas liquids at 214.7 million. Together, these represent about 87% of Canada's proven reserves. Saskatchewan's reserves of liquid hydrocarbons declined from 121.2 million cubic metres to 118.8 million and accounted for 9% of the national total.

Natural gas liquids from recently discovered, but as yet unproduced, gas fields in the Mackenzie Delta are included in the estimates but oil from the frontier regions is not, because discovered reserves of crude oil in the territories are negligible and currently well beyond economic reach.

At the end of 1978 the CPA estimated Canada's proven reserves of marketable gas at 2.3 trillion cubic metres. Using the 1978 level of production of 181 million cubic metres a day the life index increased to 35 years in 1978 from 22.95 years in 1977. Gross additions to reserves amounted to 157.2 billion cubic metres, including 71.4 billion due to extensions to existing fields, 28.7 billion to new discoveries and 57.1 billion to previously estimated field reserves. Gross additions of marketable gas reserves increased in various areas by the following percentages: Saskatchewan by 7% to 35.3 billion cubic metres; Alberta by 5% to 1.5 billion; the Arctic islands by 5% to 306.6 billion; British Columbia by 4% to 35.3 billion; and Ontario by 1% to 9.1 billion.

Alberta accounted for 67% of Canadian reserves at the end of 1978, British Columbia 9% and the territories 22%.

According to an appraisal of Alberta's oil sands completed in 1973 by the AERCB, ultimate recoverable reserves of synthetic crude oil from all of Alberta's bituminous deposits amount to 39.7 billion cubic metres. Of this, approximately 4.2 billion is considered recoverable by open-pit mining methods. Most of the oil from deeper formations will only be recoverable by on-site thermal or other techniques still being developed.

In addition to these known resources, the Geological Survey of Canada estimated in 1975 that between 2.5 and 5.4 billion cubic metres of combined crude oil and natural gas liquids remained to be discovered at the high (90%) and low (10%) probabilities respectively, about 80% of it in frontier areas. For natural gas, between 4.1 and 8.3 trillion cubic metres may exist at the high and low probability levels respectively, about 90% of it in frontier areas.

Oil refining, gas processing

13.5

The rate of growth of petroleum product demand in recent years has been reduced because of a combination of factors — a slowdown in economic activity, higher product prices and energy conservation efforts. Surplus refining capacity has resulted, mostly in the East. At the end of 1978 there were 39 operable refineries in Canada with a total capacity of 400 900 m³/d compared to 38 in 1977 with a capacity of 384 300 m³/d. Refinery runs in 1978 were about 289 233 m³/d compared to 287 267 m³/d in 1977.

Domestic demand for natural gas in Canada increased 1 003 million cubic metres a day to an estimated 42 526 million and exports were down by 11.9%.

Natural gas processing capacity at the end of 1978 was 496.8 million cubic metres, about 75.6 million over 1977. This increase reflects the addition of a record number of new plants and some expansion to existing facilities. With major new gas reserve discoveries in 1978 and 1979, gas processing capacity will probably increase substantially. Plant output includes pipeline gas, propane, butanes, pentanes plus and sulphur.

In 1978 Canadian refineries yielded an average 34.8% of motor gasoline, 33% of middle distillates including light heating oil, diesel oil and jet fuel and about 16.3% of heavy fuel oil. Other products included liquefied petroleum gas, petrochemical feedstocks, aviation gasoline, asphalt, coke and lubricating oil. To meet the high yields of light products most refineries are equipped with catalytic crackers or other cracking processes, and total installed cracking capacity in 1978 was equivalent to about 28% of crude distillation capacity.

Catalytic reforming amounted to about 18% of crude capacity. This process upgrades gasoline quality and also delivers aromatic petrochemical feedstocks. To meet the need for high quality low-sulphur distillates, hydrogen-treating plants have been installed totalling 43% of crude feed and it is common practice to hydrosulphurize most or all gas, oil and light distillates. Hydrocracking is used to upgrade heavy fuels to motor gasoline and middle distillates.

At Sarnia, Ont. three refineries are integrated with nine petrochemical companies. The oil refineries supply petroleum gases, naphtha and aromatics. The chemical companies convert them to a large number of intermediate and final products. Western Canadian natural gas is also piped into this complex. The intermediate products include ethylene, propylene, butadiene, aromatics and ethylene oxide. Final products include carbon black, synthetic rubbers, detergent alkylates, polyethylene, polystyrene, polyvinylchloride, ammonia, fertilizers, petroleum additives and many others. Many products are sold back to the refineries for blending into fuel products. Fuels are piped directly to the petrochemical plants for process heat and power requirements. Montreal and Edmonton are also major petrochemical centres but plants are distributed widely across Canada.

In the past, location and size of Canada's refineries was determined by the tendency to install them close to centres of consumption. Thus, approximately 60% of total capacity is in the populous regions of Southern Ontario and Quebec. Ontario has two main refining centres, in Sarnia and southwest of Toronto; Quebec has the largest refining centre, in Montreal, as well as a refinery in Quebec City. British Columbia has seven refineries, most close to Vancouver.

More recently the size of individual refineries is being increased for economies of scale, particularly in Alberta, Saskatchewan and British Columbia. Many small refineries have been phased out and replaced by two large refineries in Edmonton, close to the main sources of crude. They will confine the area subject to any environmental risk. Environmental control and conservation equipment to meet new standards is being installed during refinery modernization programs.

A third factor influencing refinery location has been proximity to deepwater ports where crude input is received by tanker. The economies obtained with huge tankers stimulated construction of large refineries in the Atlantic provinces, specifically at Saint John, NB and Point Tupper, NS. Since these are located in areas of relatively low population density, most of their output is either shipped inland or re-exported. Production of Canadian refineries is closely in balance with total market demand, although there is some interchange of individual products to and from the United States. Exports were up from 1977 while imports were down.

13.6 Transportation

13.6.1 Natural gas

The complete system of gas transmission lines serves major Canadian centres from Vancouver to Montreal and transports gas to the international border for US markets from California to New England.

Most Canadian natural gas must be processed before it can be marketed. Gathering lines take raw gas from producing wells to a collection point on a transmission system or to the inlet of a gas processing plant. Main transmission systems receive marketable gas from field gathering lines or plants and transport it through trunk lines to Canadian distribution companies or to interconnected US transmission pipelines at the border. Distribution systems serve the ultimate customers in the centres of population.

During 1978, 8 012 km of gas pipelines were added to gathering, transmission and distribution systems, compared with the construction of 8 077 km in 1977. Additions to gas distribution systems accounted for more than three-quarters of the total pipeline additions in 1977. By the end of 1978 total gas pipeline length was 148 915 km.

The Polar Gas Project was initiated in 1972 to determine the feasibility of a natural gas transportation system from the Arctic islands to southern markets. As a result of its studies, Polar Gas Limited filed an application with the NEB and the Indian and northern affairs department to construct a large-diameter pipeline from the Arctic islands to interconnect with the TransCanada PipeLines system in northern Ontario. The pipeline route would stretch a total distance of 3 763 km including 143.7 km of channel crossings between islands. The pipeline would transport 59 million cubic metres a day of natural gas and have a maximum capacity of 85 million. It would require 425 to 566 billion cubic metres of natural gas reserves to ensure full utilization of the line over its economic life. Exploration in the Arctic islands to the end of 1978 had already resulted in natural gas discoveries of approximately 260 billion cubic metres.

An alternative for the transportation of natural gas from the Arctic islands to southern markets is the use of ice-breaking liquefied natural gas (LNG) tankers. Petro-Canada, Alberta Gas Trunk Line, and the Melville Shipping group have developed the Arctic Pilot Project designed to deliver 7 000 000 m³/d of natural gas by two LNG tankers from Melville Island in the Eastern Arctic to a port and re-gasification plant near Quebec City or on the East Coast. Petro-Canada filed an application with the NEB and the Indian and northern affairs department in mid-January 1979, for regulatory approval of the project. TransCanada PipeLines was also studying the feasibility of transporting natural gas by LNG tankers from the Arctic islands to a terminal near Quebec City. This gas would be a future source of supply for Quebec and the Maritime provinces.

During 1978 two proposals were submitted to the NEB to extend natural gas service east of Montreal. Q&M Pipe Lines Ltd. proposed construction of a pipeline to interconnect with the existing TransCanada PipeLines system near Montreal and extend eastward through Quebec, New Brunswick and Nova Scotia. The main line would follow the north shore to Quebec City, then cross the St. Lawrence River, continue to the Maritime provinces and terminate at Halifax. In addition to the 1 220 km of main trunk line, 1 832 km of lateral lines would serve more remote communities. TransCanada PipeLines proposed to extend its pipeline north of Montreal as far east as Quebec City and to construct a second extension south of Montreal to serve communities in the Eastern Townships.

The projected Alaskan Highway Gas Pipeline is designed to deliver natural gas from Prudhoe Bay, Alaska to southern US markets and also to provide access to Canada's Mackenzie Delta gas reserves when required. The pipeline route follows the Alyeska Oil Pipeline from Prudhoe Bay to Fairbanks, then parallels the Alaska Highway through Yukon to Fort Nelson, BC. The route continues through Alberta to Caroline where it divides into two legs. The eastern leg passes through southwestern Alberta to Monchy, Sask. near the international boundary, and continues to markets in the US midwest. The western leg passes through southern British Columbia to Kingsgate near the international boundary and continues to California markets. The proposed pipeline would stretch 1 175 km in Alaska, 3 262 km in Canada, and 3 264 km in the lower 48 states. The schedule is for construction to begin in 1982 and for initial gas deliveries in the winter of 1984-85. The Canadian portion of the pipeline would be built by Foothills Pipe Lines (Yukon) Ltd. which is jointly owned by Alberta Gas Trunk Line and West-coast Transmission. Alaskan Northwest Natural Gas Transportation Co., a partnership of US gas pipeline companies, would build the Alaskan segment of the pipeline.

A number of steps were taken toward construction of the Alaskan Highway Gas Pipeline. In April 1978 the Northern Pipeline Act was passed by Parliament establishing the Northern Pipeline Agency to co-ordinate all federal responsibilities directly related to the pipeline system in Canada. The act gave effect to the Canada-US agreement of September 20, 1977, on principles applicable to the pipeline. The act constitutes the certificates of public convenience and necessity authorizing the project and requires Foothills Pipe Lines to comply with the terms and conditions established by the legislation and by the Northern Pipeline Agency.

On May 4, 1979, two agreements between the Government of Canada and Foothills Pipe Lines were signed committing Foothills to study the feasibility of constructing a pipeline connecting Mackenzie Delta gas reserves to the Alaskan Highway pipeline and to proceed with the pipeline in a timely manner. The agreements committed Foothills to provide capacity on the Alaskan Highway pipeline to accommodate Mackenzie Delta gas production.

In the US, the National Energy Plan was signed into law on November 9, 1978 setting the maximum price for natural gas produced from Prudhoe Bay and also allowing pricing on a rolled-in basis of the wellhead price and transportation costs of gas from that area. These pricing policies are considered essential to marketing Alaskan natural gas.

13.6.2 Transportation of oil

Canadian oil moves to markets through a network of oil pipelines extending from the oil fields of Western Canada to Vancouver, and east as far as Montreal. This network serves Canadian refineries in British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, and Quebec, as well as US markets in the Puget Sound, midwest, and upper New York state areas.

Prime components are the trunk lines of Interprovincial Pipe Line Ltd., Canada's largest oil pipeline, and the Trans Mountain Oil Pipe Line Co. Both lines start in Edmonton and are fed by a network of gathering lines transporting oil to the main trunk lines at that point. Outside Alberta, the Interprovincial pipeline receives and transports Saskatchewan and Manitoba crude oil.

Trans Mountain operates a pipeline system which carries crude and natural gas liquid from Edmonton and other points in Alberta and British Columbia to Burnaby, BC. A subsidiary operates branch lines to refineries in the state of Washington.

Another prime mover of oil from Alberta, the Aurora pipeline, with a length of only 1.6 km within Canada, receives crude oil and equivalent from the Rangeland gathering system for delivery to the Continental Pipeline Co. in the US which transports oil to Billings, Montana for refining and further shipment to points in the US midwest.

The Middle East oil embargo of the winter of 1973-74, coupled with frequent price increases of offshore oil, led the federal government to decide on a policy of energy self-reliance for Canada. As a result, in May 1975 the federal government reached an agreement with Interprovincial Pipe Line Ltd. to extend the Interprovincial system from Sarnia to Montreal to provide Montreal refineries with access to more secure domestic supplies of Canadian crude oil. The extension was completed in June 1976. During 1978, deliveries of Canadian crude oil to Montreal averaged 43 880 m³/d or just over one-half of Quebec's crude oil requirements.

During 1978 construction of the Cochin pipeline was completed and deliveries began in September 1978. The pipeline stretches 3 058 km from Edmonton, through the US midwest, to Sarnia, Ont. The pipeline transports surplus Alberta ethane, ethylene, and propane to eastern Canadian and US markets.

Alberta Oil Sands Pipeline Ltd. completed construction of an oil pipeline for the transmission of synthetic crude oil from the Mildred Lake extraction plant of Syncrude Canada Ltd. to the International Pipe Line Ltd. terminal in Edmonton. Deliveries of synthetic crude began in September 1978.

13.7 Coal

Forecasts of Canadian coal production for the 1980s suggest that output will continue to increase.

If all projects under consideration go ahead, thermal coal consumption for the generation of electricity would approximately double by 1985. Exports of both coking and thermal coal are expected to increase, although at a less rapid rate than that of coking coal in the early 1970s. Sales to Japan are expected to continue to dominate exports, although sales to other countries should increase as coal producers continue the trend toward greater market diversification.

Total coal production in Canada in 1978 reached 30.5 million tonnes, up from 28.7 million in 1977. Imports dropped to 14.2 million tonnes, down from 15.4 million. On the demand side, consumption of thermal coal increased to nearly 23 million while domestic demand for coking coal reached 6.9 million and demand from the industrial-commercial sector equalled 1.9 million. Exports increased to 14 million tonnes in 1978, up from 12.4 million in 1977 (Table 13.11).

The value of Canadian production was estimated at \$776 million in 1978, up from \$674 million in 1977. Output increased in Nova Scotia, New Brunswick, Alberta and British Columbia, but decreased in Saskatchewan. Western Canadian production exceeded 27 500 000 t, while output from Nova Scotia and New Brunswick mines reached 2 900 000 t.

Approximately 12 600 000 t of coal were exported in 1978 from British Columbia and Alberta, while Nova Scotia exported nearly 1 000 000 t. Japan received over 80%; other exports went to other Asian, Latin American and European countries.

During 1977 and 1978 the world steel industry remained depressed. Although demand for coking coal remained weak and Japan's steel industry operated below capacity, exports to Japan increased in 1978 and 1979.

Demand for thermal coal grew to meet energy requirements. Nova Scotia, New Brunswick, Ontario, Manitoba, Saskatchewan and Alberta consumed approximately 23 000 000 t of coal to generate electricity in 1978.

Domestic coal, mainly sub-bituminous in Alberta and lignite in Saskatchewan, supplied over 13 000 000 t to Western Canada power stations. Bituminous coal was used for thermal power generation in New Brunswick, Nova Scotia and Ontario. Demand for bituminous and lignite coal by general industrial and commercial users was primarily satisfied from imports.

Production areas

13.7.1

British Columbia. Coal mining is centred in the southeast where Kaiser Resources Ltd., with two mines in the Crowsnest coalfield, produced about 5 600 000 t of clean or saleable coal in 1978. Exports to Japan continued to dominate Kaiser's sales, although shipments also went to South Korea, Mexico, Pakistan and Brazil. In addition, a new contract was signed with Romania.

The Fording Coal Ltd. mine near Elkford produced about 2 700 000 t of saleable coal in 1978, virtually unchanged from 1977. In addition to major sales to Japan, spot shipments were made to Latin American countries.

Byron Creek Collieries produced approximately 516 000 t of clean coal in 1978 up from 366 000 t in 1977. Production will continue to expand to supply Ontario Hydro requirements and export markets. By the early 1980s Byron Creek expects to supply nearly 700 000 t of coal annually to Ontario Hydro.

Studies continued in 1978 on potential coking and thermal coal developments. Among them, European, Japanese and Canadian interests continued feasibility studies on several potential coal-producing properties. BC Hydro and Power Authority studied lignite coal deposits near Ashcroft as a potential source for a major electricity generating project.

Alberta. In volume, Alberta is Canada's leading coal-producing province, mining bituminous, sub-bituminous and semi-anthracite coals. Most bituminous coal is exported to Japan for coke making. In 1978 some bituminous coal was marketed to Ontario Hydro and to overseas customers. Bituminous production reached 5 100 000 t, an increase of 20%, and sub-bituminous production 8 300 000 t, an increase of 5% over 1977.

Sub-bituminous coal was used to meet increasing demand for electrical energy and to satisfy some of Saskatchewan's electricity needs. On the Prairies, thermal electric plants are generally located close to coal mines to facilitate low-cost power generation. Near Wabamun Lake, west of Edmonton, Calgary Power Ltd. operates two power plants using coal from two surface mines. Other coal-fired power plants include the Drumheller, Battle River and Grande Cache stations.

During 1978, proposals for two new coal-fired generating stations were under review. The proposed Keepphills and Sheerness stations would eventually generate a total of 1 500 MW of electricity, using sub-bituminous coal.

Four mines produced coking coal in Alberta in 1978. McIntyre Mines Ltd. near Grande Cache produced 1.5 million tonnes of saleable coal, down from 1.9 million in 1977. Most of the coking coal was sold to Japan, while middlings coal was sold to Alberta Power Ltd. for use in the Grande Cache thermal generating station.

Luscar Ltd.'s Cardinal River mine produced approximately 2 million tonnes of saleable coking coal in 1978, up from 1.5 million. While most of this coal was marketed to Japan, small shipments were also made to Latin American countries. Luscar has contracted to supply a South Korean steel company with substantial amounts of coal.

Canmore Mines Ltd. produced 113 000 t of semi-anthracite coal in 1978 while Coleman Collieries Ltd. produced 1 000 000 t from its underground and open-pit mines. Both companies market their coal to Japanese steel companies.

Other mines produced sub-bituminous coal for power generation. Output at Calgary Power Ltd.'s Highvale mine west of Edmonton reached 4.9 million tonnes in 1978 compared with 4.6 million in 1977, while the nearby Whitewood mine produced 1.3 million, down from 1.4 million. Southeast of Edmonton, Manalta Coal Ltd.'s Vesta mine processed 512 000 t and Forestburg Collieries Ltd.'s Diplomat mine, 923 000 t, for power generation and industrial markets. Output at Manalta's Roselyn mine northeast of Calgary reached 438 000 t.

During 1978, the Coal Valley mine of Luscar Sterco Ltd. became Alberta's newest mine. Originally developed to supply coal to Ontario Hydro over a 15-year period, this mine shipped coal to both Ontario Hydro and to a West German utility. Eventual output is expected to exceed 2 million tonnes annually.

Saskatchewan. In 1978, five mines in southern Saskatchewan produced 5 million tonnes of lignite coal, down from 5.5 million in 1977. Output from the Manitoba and Saskatchewan Coal Co. Ltd.'s Boundary Dam was unchanged at 1.7 million while output

Production of coal in Canada has been increasing steadily, reaching a record 30.4 million tonnes in 1978. (In 1977 it was nearly 28.7 million tonnes, in 1974, 21.3 million.) Uranium production increased to 6 750 tonnes in 1978 from 5 794 tonnes in 1977, continuing an upward trend that began with increased demand in 1974. While exports of both minerals have been going up, projections indicate that by 1985 the use of coal will double and of uranium will nearly triple for the production of thermal energy in Canada.

from Manalta's Utility mine was 1.9 million, up from 1.4 million in 1977. Other production included 449 000 t from the M&S mine at Bienfait and 674 000 t from Manalta's Klimax mine, both serving power generation and industrial markets, and 343 000 t from the Souris Valley mine of the Saskatchewan Power Corp.

Lignite production declined because of reduced demand in Manitoba, as electricity output from hydro sources returned to normal levels. Construction continued on a new thermal power station south of Moose Jaw, and this, along with commitments to supply Ontario Hydro's new Thunder Bay generating station with lignite coal, was expected to lead to increased lignite production.

New Brunswick. In 1978, N.B. Coal Ltd., a provincial Crown company, produced a total of 315 000 t of clean coal — a 14% increase over the 1977 production of 277 000 t. Most of it was used to produce electricity but some was supplied to other markets and to Quebec.

Nova Scotia. Production of saleable coal in Nova Scotia increased to 2.7 million tonnes in 1978, up from 2.2 million in 1977. Most production came from three mines of the Cape Breton Development Corp. (DEVCO): the Lingan mine, No. 26 Colliery and the Prince mine. About 45% of Nova Scotia's 1976 production was thermal coal. Nova

Scotia coal was sold in provincial, European and Latin American markets and to Ontario steel companies in Hamilton. A new 150 MW thermal power unit was scheduled for 1980. It will consume approximately 700 000 t of Nova Scotia coal when operating at full capacity.

Government activities

13.7.2

Provincial and federal governments were active in several areas in 1977 and 1978 in preparation for the growth predicted for Canada's coal industry in the 1980s and 1990s. In June 1977, British Columbia became the second province (after Alberta in 1976) to establish a provincial coal policy stressing the employment and tax generating potential of the provincial coal industry. In 1978, Saskatchewan released a coal policy stressing the increasingly important role its coal resources will play in meeting future energy needs both in and out of the province. In 1977, the federal government issued a draft statement on Canadian coal policy at a conference of federal-provincial energy ministers in Ottawa. Discussions with provincial and industry representatives on a national coal policy continued during 1977 and 1978.

Two major federal-provincial programs evaluated coal resources in widely separated coal-producing provinces. A joint drilling program completed six offshore holes in Nova Scotia in 1977. The program was extended in 1978 and 1979 with drilling under way in the Sydney coalfield and off Mabou and Sydney harbours. Under a federal-provincial agreement, British Columbia investigated the possible development of coal resources in the northeastern corner of the province. Up to \$10 million was originally set aside to evaluate coal geology, infrastructure requirements, environmental issues, manpower requirements and townsite questions related to potential development of several coking coal properties.

Federal and provincial governments increased their participation in R&D. Studies on coal conversion (liquefaction), resource and reserve evaluation, mining techniques, new combustion processes and other areas were under way. Further work was planned for the 1980s.

Uranium and nuclear energy

13.8

Canada's uranium industry continued to expand in 1977 and 1978 to meet increasing domestic and export commitments. Production of uranium in 1978 was an estimated 6 750 t of uranium (U) compared to 5 794 t in 1977, due to expanded production at all six Canadian producing operations. [1 metric tonne of elemental uranium (tonne U) = 1.2999 short tons uranium oxide (U_3O_8).] Shipments of uranium made by these producers from production and inventory amounted to an estimated 8 000 t, valued at \$588 million, some 55% from four producers in Ontario and the rest from two producers in Saskatchewan; final shipments for 1977 were reported at 5 787 t, valued at \$349,219,143. Further increases in production can be expected as a result of expansion and the probable development of several new operations. Based on known deposits, Canada could be producing some 12 500 t of elemental uranium a year by 1985.

Uranium exploration expenditures in Canada continued at a high level in 1978, with activity in all provinces and territories. It was expected that expenditures would exceed the \$72 million reported for 1977 on the basis of a survey of uranium exploration activities conducted by EMR. Some 294 000 m of exploratory drilling were reported; more than half was carried out in Saskatchewan where several significant discoveries have been made since 1975.

A uranium resource appraisal group in EMR completed its fourth annual assessment early in 1978. Resource estimates are divided into categories reflecting different levels of confidence in the quantities reported, and subdivided into two levels of economic exploitability related to the current market price of uranium. In the 1977 assessment, the lower price category was bounded by the uranium market price estimated at \$110/kg U in September 1977 and the higher price category spanned the \$110-\$160/kg U interval.

Three categories (measured, indicated and inferred) are used to allocate domestic responsibility among Canadian producers, as required under Canada's uranium export

guidelines. Resources mineable at uranium prices up to \$160/kg U were estimated at 82 000 t measured, 107 000 t indicated and 318 000 t inferred U. Additional resources were estimated at 388 000 t U.

In January 1978, Canada and the European Economic Community (EEC) signed an agreement providing for revised nuclear safeguards with respect to Canadian exports of uranium and nuclear technology. Japanese and Canadian government officials completed similar negotiations in January 1978, thus enabling uranium shipments to be resumed to Japanese customers. Negotiations providing for revised nuclear safeguards arrangements between Canada and Switzerland were not completed until mid-1979 and shipments to that country remained under embargo through 1978 and much of 1979.

In 1978, the Saskatchewan government announced that Phase I of the Cluff Lake uranium project could proceed, subject to occupational health, safety and environmental regulations recommended in the report of a provincial board of inquiry. The government agreed in principle with the general expansion of the uranium industry and committed itself to an in-depth review of the board's recommendations. A surface lease agreement reached in October 1978 with Amok Ltd. included recommendations of the board respecting environmental protection measures, the health and safety of workers, and employment and business opportunities for northerners. It was expected that these arrangements would serve as a model for later development.

The government of British Columbia announced that a provincial inquiry would begin in 1979, to recommend standards for uranium mining, to be followed by new guidelines for approval of uranium development projects. In late 1978, an interim report on nuclear power in Ontario was released by the Royal Commission on Electric Power Planning (the Porter commission). While endorsing the continued growth of nuclear power in Ontario, the report suggested that Ontario Hydro's projected installation rate seemed somewhat ambitious. Commission hearings were to continue.

Domestic uranium requirements, estimated at 560 t U in 1977, are expected to rise to some 1 600 t a year by 1985 and 2 500 t by 1990.

In mid-1977 nuclear generating capacity operating in Canada exceeded 5 000 megawatts, 95% of it in Ontario. Additional capacity totalling 10 820 MW was either under construction or committed and scheduled for operation by 1987, some 38% to be in Ontario.

In February 1978, the Ontario government approved the purchase by Ontario Hydro of some 76 160 t U from Denison Mines Ltd. and Preston Mines Ltd. over the period 1980 to 2020. These contracts, the largest sales to date in the world's uranium industry, will permit uranium operations to continue in the Elliot Lake area. As of December 1978 outstanding export commitments of all Canadian producers were approximately 63 000 t U. With continued growth it was expected that uranium would again become one of Canada's leading export commodities.

13.9 Electric power

13.9.1 Electric power development

Total installed generating capacity increased by 5.8% in 1977 to 70 217 MW with additions totalling 3 821 MW (865 MW hydro, 1 356 MW conventional thermal, and 1 600 MW nuclear capacity). Preliminary figures for net additions to generating capacities during 1978 totalled 4 040 MW and raised the total installed generating capacity by 5.7% to 74 568 MW. The capacity additions consisted of 1 564 MW hydro, 1 676 MW conventional thermal, and 800 MW nuclear.

Production of electricity in 1977 increased 7.8% over 1976 to 317 TWh. In 1978 production again increased by 6% over that of 1977, to 336 TWh. Part of the increase was due to a 5.5% growth in Canadian consumption and the balance was from increased exports to the US.

Total production of electricity in Canada in 1977 was derived from hydro, 69.6%, thermal, 22.6%, and nuclear generation, 7.8%. The respective figures for 1978 are 69.7%, 21.5% and 8.8%. Nuclear production increased by 18.4% over the previous year and provided nearly 29% of the total generation in Ontario.

Electrical energy consumption in 1977 totalled 299 TWh (an increase of 5.4% over 1976), distributed across the country in the ratio of approximately 33% in each of Quebec and Ontario, 13% in British Columbia, about 6% in Alberta, between 2% to 4% in each of Manitoba, Newfoundland, New Brunswick, Nova Scotia and Saskatchewan, with Prince Edward Island, Yukon and Northwest Territories accounting for the remainder. Growth rates in electricity production varied considerably across the country, from a high of 23.4% in New Brunswick (due to addition of the third unit at Coleson Cove) to a low of 10.6% in Manitoba. On a nationwide basis, total residential consumption grew 3.1%, commercial 0.6% and industrial 11.0%.

The 1977 rate of consumption increase was below the long run average and below that of 1976, reflecting the high correlation between electricity consumption and economic activity. Real gross national product increased by 2.6% in 1977 compared to 4.9% in 1976. Electricity consumption increased by 5.5% in 1978 to 316 TWh. This was up slightly from the increase recorded in 1977, but considerably below the 1960-78 growth rate of 6.5% a year. The annual growth has been 4.7% since 1973 when the sharp increase in the world price of oil resulted in a marked change in energy demand.

The decrease since 1960 in the industrial sector portion reflects the declining prominence of electricity-intensive industries such as aluminum smelting and pulp and paper; the more rapidly rising demand in the commercial and residential sectors reflects, in part, the recent rise in electric space heating and cooling and the increasing degree of urbanization in Canada.

Net export of electrical energy in 1977 was 17 TWh or 5.4% of net generation, up 85% over 1976. This large increase was mainly due to weather conditions, low water availability in the hydro system of the US Pacific northwest and unusually cold weather early in the year, followed by extremely hot weather in July in the New England area. Net exports again increased by about 13% during 1978 over 1977, to a net total of 20 TWh, resulting from exports of 22 TWh and imports of 2 TWh. This represents 6.6% of net Canadian electricity generation, with Quebec, Ontario and Manitoba mainly responsible for the increase.

Generating capacity

13.9.2

Power generating capability measures available generating resources of all hydro and thermal facilities at the time of the one-hour firm peak load for each reporting company and is less than the installed capacity of such generating facilities.

Hydroelectric power generation

13.9.3

Hydroelectric generation forms a significant though decreasing part in Canada's electrical development. By the end of 1978, the hydro portion of the country's total generating capacity had fallen from over 90% about 20 years earlier to 69.7%.

Many of Canada's extensive water resources would seem to be potential sources of hydroelectric power, but not all are economically viable. Only a fraction can be developed competitively. A detailed analysis must be made of such factors as cost, geography, geology and ecology. Until such a study is completed, estimates of Canada's undeveloped hydro-power resources (estimated to exceed 60 000 MW), may be misleading.

The maximum economic installation at a power site can be determined only by careful consideration of all conditions and circumstances. It is normal practice to install units with a combined capacity in excess of the available continuous power at the flow available 50% of the time, and frequently in excess of the power available at the arithmetical mean flow. Excess capacity may be installed for use at peak-load periods, to take advantage of periods of high flow, or to facilitate plant or system maintenance. In some instances, storage dams have been built after initial development to smooth out fluctuations in river flows. In others, deficiencies during low flow have been offset by auxiliary power supplied from thermal plants or by interconnection with other plants operating under different load conditions or located on rivers with different flow characteristics. The extent to which installed capacity exceeds available continuous power depends on factors that govern the system or plant operation, and this varies widely from one area to another.

Distribution of installed hydroelectric generating capacity given in Table 13.13 shows that substantial amounts of water power have been developed in all provinces and territories except Prince Edward Island. As natural-resource development proceeds, the fortunate incidence of water power near mineral, forest and other resources becomes increasingly apparent. The vast hydro potential of northern rivers may well prove to be a prime factor in the eventual realization of the natural wealth of the Canadian North.

Water-power resources of Nova Scotia and New Brunswick, although small, make a substantial contribution to the economies of the two provinces. Numerous rivers provide moderate-size power sites near principal cities and towns. Others are adjacent to timber and mineral resources. These provinces have, however, turned to thermal generation, initially coal-fired, with a subsequent shift to oil. Construction of a nuclear power plant in New Brunswick is under way and coal may again become a fuel source for new installations.

13.9.4 Thermal power generation

The contribution being made by thermal energy (including nuclear power) to Canada's power economy rose to 29 171 MW by the end of 1977 and 31 647 MW by the end of 1978. Thermal generation is predominant in Prince Edward Island and Nova Scotia and is expected to become increasingly important in Alberta, Saskatchewan and Nova Scotia through greater use of coal, and in Ontario and New Brunswick through greater use of nuclear generation and coal.

Over 90% of all thermal power generating equipment in Canada is driven by steam turbines fired by coal, oil, gas or uranium. Generation provided by gas turbine and internal combustion equipment has flexibility particularly suitable for meeting power loads in smaller and especially isolated areas. Gas turbines are frequently used for peak loads because of rapid start-up capability and low capital cost. (Table 13.13)

Although conventional thermal plants accounted for almost 36% of installed capacity in 1977 and 1978, they accounted for approximately 22% of total generation (Table 13.15), as much of the capacity is operated for peak-load duty while hydroelectric capacity provided base-load generation. This pattern will change as additional nuclear-fuelled plants (which can operate economically at high capacity for base-load purposes), are introduced.

13.9.5 Nuclear thermal power

Commercial electric power generation from a nuclear reactor began in 1962 when the 20-MW nuclear power demonstration station at Rolphton, Ont., fed power for the first time into a distribution system in Ontario.

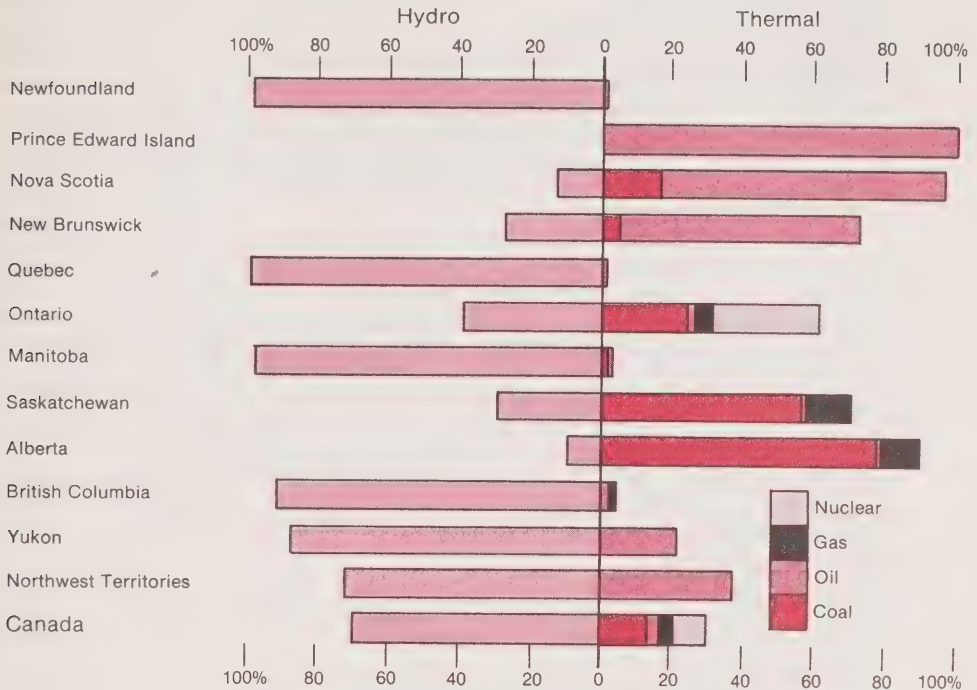
Atomic Energy of Canada Limited (AECL) has concentrated on development of the CANDU power reactor using heavy water (deuterium oxide) as a moderator for slowing the neutrons released by nuclear fission. Using this with neutron-transparent core materials (zirconium alloys) means Canada's abundant resources of natural uranium may be used as fuel. The CANDU system is sufficiently flexible that enriched uranium, plutonium recovered from spent fuel, or thorium may be incorporated into its fuel system.

Production of heavy water is a key element of the Canadian nuclear power program. The first 726 tonnes-a-year production plant at Ontario Hydro's Bruce nuclear power development on Lake Huron went into operation in 1973 and is producing at over 80% of its design capacity. A production plant of the same potential capacity at the Bruce site has been commissioned and another of one-half this capacity is scheduled for completion in 1981. In Nova Scotia, the Port Hawkesbury and Glace Bay heavy water production plants were in full operation during the year. Ownership of the plants was transferred to AECL in 1975 and 1978 respectively.

At Douglas Point, on the shore of Lake Huron, the country's first full-scale nuclear power station went into operation in 1966. The station, built with the co-operation of Ontario Hydro, houses a 220-MW CANDU reactor. Experience gained in the design and operation of the Rolphton and Douglas Point reactors has led to development of larger units. The four-unit 2 160 MW Pickering nuclear station near Toronto operated during 1978 at a capacity factor of 87.8%. In addition, the last of four units at the 3 164 MW

Electrical energy generation by principal fuel type, 1978

(Per cent of provincial total)



Bruce nuclear station began operation near the end of 1978. During the year, the three Bruce units in operation had a capacity of 74.3%. Duplicates of the Pickering and Bruce nuclear stations are under construction and work started on the four-unit 3400 MW Darlington nuclear station on Lake Ontario between Bowmanville and Oshawa in 1977. Hydro-Québec and New Brunswick Electric Power Commission 600-MW CANDU stations are under construction at Gentilly and at Point Lepreau.

A further step in development of the CANDU reactor is the use of boiling light water instead of pressurized heavy water as the coolant. The initial Gentilly nuclear power station (Gentilly I) uses boiling light water; this station came into service in 1971 with 266 MW of nuclear-electric capacity.

Load demand and energy use

13.9.6

The demand for electricity depends basically on population growth and concentration, economic activity, the price of electricity and, to a lesser extent, the price of electricity relative to prices of such fuels as oil and gas. Demand for electricity is closely correlated with economic activity as measured by real gross national product (GNP). The annual rate of growth in electricity demand had been stable at about 6% to 7% for 25 years up to 1973, in a period when the rate of growth of real GNP was about 5%. A sharp increase in the world price of oil in 1973 adversely affected economic activity in Canada, as well as most other countries and changed the way energy was used. Since 1973, the annual growth rate of electricity has fluctuated considerably, including a decline for the first time since 1948 of about 0.3% in 1975. The compound annual growth rate for 1974 to 1978 has been 4.2%, and the rate of economic growth as measured by real GNP has been 3.2%. The reduced rate of electricity demand growth is undoubtedly caused by the

relatively low rate of economic growth, higher electricity prices, and successful conservation measures.

13.9.7 Electric power transmission

Loads handled by small, widely scattered generating systems in the early days of electric power did not warrant the expense of interconnecting power systems. However, increased demand for dependable electric power and improved techniques resulting in lower transmission costs led to reappraisal of the benefits of integrating power systems for better reliability of service and greater flexibility of operation. Most of Canada's generating stations today are components of large, integrated, and often interconnected systems operated by power utilities.

Improved techniques enable power producers to use hydroelectric sites once considered beyond economic transmission distances. Most noticeable is the progressive increase of transmission line voltages. A number of transmission lines are designed for operation at 500 kV and 735 kV. A 924-km 500 kV line carries power from the Peace River to the lower mainland of British Columbia. In Quebec, a 700-km 500 kV line brings power from hydro plants in the James Bay watershed to Montreal.

By the end of 1977 a submarine cable between New Brunswick and Prince Edward Island was supplying nearly half the power requirements on Prince Edward Island.

The search for economies has led to changes in materials used and in tower erection and cable-stringing methods. Guyed V-shaped and Y-shaped transmission towers are being used instead of self-supporting towers where the terrain is suitable, and erection costs are being reduced by using helicopters to transport tower sections to the site.

13.9.8 Electric utilities

The National Energy Board is responsible for federal regulation of electric utilities regarding export of electric power and construction of transmission lines for such export.

About 90% of power generated in Canada is by publicly and privately operated utilities and the rest by industrial establishments (Table 13.17).

Determination of market prices and regulation of services is limited to competition with oil, gas and coal. There is some regulation of electric utilities in all provinces. In all except Alberta and Prince Edward Island, major generation and main power transmission are the responsibilities of provincial Crown corporations. Investor-owned electric utilities are prominent in Alberta, Newfoundland and Prince Edward Island and play a significant role in Ontario. On a percentage basis, industrial generation has been declining steadily as purchasing of power from utilities becomes more attractive.

13.9.9 Aid to Atlantic provinces

Improvement of electrical supply in Atlantic Canada is being promoted by federal loans for nuclear power in New Brunswick, an interconnection between New Brunswick and Nova Scotia, and offers of federal aid for an inventory of Newfoundland energy resources and for a transmission system to carry power from the proposed Gull Island hydroelectric project.

In December 1979 the federal minister of energy, mines and resources announced that \$25 million had been allocated to the Annapolis River tidal project.

The concept of a Maritime energy corporation to rationalize electric power generation in the Maritimes remained under consideration at the end of 1979.

13.10 Provincial activities

13.10.1 Newfoundland

Nearly all the province's electrical energy is hydraulic in origin (94% in 1977) and the remainder is supplied by combustion turbines and oil-fired thermal generation. Energy consumption for 1977 grew by 7.3% over 1976 and an additional 2.7% for 1978.

Load growth in 1978 was about 8%, compared with about 6.5% in 1977 and an average annual growth rate of about 15% in recent years.

Capacity additions in 1977 were 154 MW at Baie d'Espoir and 54 MW at Hardwoods substation near St. John's. Other additions committed were 150 MW at the Holyrood thermal plant for 1979 and a 75-MW hydro development at Hind's Lake for an in-service date of 1980. There was no new major transmission construction in 1977.

There was no new generation expansion in Newfoundland during 1978 and the only major transmission expansion was the completion of the 138-kV, 14 km line connecting the Hind's Lake hydro development (under construction) and the island network. A 230-kV transmission circuit between Holyrood and Hardwoods substation and a 138-kV line from Deer Lake to Rocky Harbour were deferred to 1981 from the original in-service date of 1979, primarily due to load forecast reductions and capital budget constraints.

Prince Edward Island

13.10.2

Electric power generation on-island is entirely dependent on oil. Increasing prices of this fuel have led to higher electricity costs. The submarine cable interconnection with New Brunswick in 1977 started to relieve the province's dependence on local small-scale oil-based generation by providing access to power supply from larger, more efficient fossil-fuelled plants and from nuclear generation on the mainland.

In 1978, 60% of the electricity was generated on-island while 40% was purchased from New Brunswick and transmitted by the 138-kV submarine cable installed in 1977. It is anticipated that future needs will be met in the short term by continuing firm power purchases from New Brunswick. It was expected that in late 1980 or early 1981, power would be available from the lease of a 5% entitlement from the Point Lepreau nuclear power station in New Brunswick. The nuclear entitlement is perceived as a firm power source with stable energy costs and considered to be a hedge against anticipated rising prices of petroleum fuel.

Maritime Electric acquired right-of-way for a transmission link between Bedeque (the island terminal of the submarine cable) and West Royalty, the main substation for the Charlottetown area, to accommodate a 138-kV transmission line expected to be in operation in May 1980.

Load growth in 1978 was considerably higher than in 1977 (nearly 6% compared to 1.6%) reflecting an unusually large increase in new customers and increased light industrial and agricultural consumption. The forecast annual load growth has been revised to 4% from 1980 onward (based on an annual load factor of 57%).

Nova Scotia

13.10.3

To reduce dependency on expensive imported oil, the Nova Scotia Power Corp. has intensified the focus on alternative sources of energy, coal and hydro. Studies were undertaken on the conversion of existing oil-fired stations to coal, and the introduction of coal/oil slurry techniques to maximize the use of coal in boilers designed for oil-firing. The Wreck Cove hydro peaking plant came on line in February 1978. Construction continued on the Lingán coal-fired plant with the first 150-MW unit scheduled to be put in service in 1979.

Work progressed on the installation of a 345-kV interprovincial tie with New Brunswick, together with a new 230-kV reinforcement network within the province to link major generating centres. The centre for the interprovincial grid and interconnection, a new substation at Onslow, would be the first in the province to operate at 345 kV and would permit a significant increase in power transfer capability. The federal government was providing 50% of the funding for the Onslow substation.

Unlike 1977, when electricity demand decreased by about 1%, demand growth in 1978 amounted to about 4% — still somewhat below forecasts. Future annual growth was estimated at 4.4%.

In August 1978 the Nova Scotia Public Utilities Board authorized the Nova Scotia Power Corp. to increase rates by 16% to 18%. However, the impact to the residential customer was reduced by a provincial subsidy, and during a three-year program, rate increases were to be indexed to the annual rise in the cost of living. This will mean greater government subsidies if the Public Utilities Board grants future rate increases

exceeding the rise in the cost of living. The industrial and commercial sectors also benefitted from subsidies for one year, with the provincial government picking up half the increase.

13.10.4 New Brunswick

Provincial consumption grew by 7.9% in 1977, made up of a 12.3% increase in industrial demand and a 4.8% increase in non-industrial consumption.

The New Brunswick Electric Power Commission undertook a generation expansion program to raise the installed capacity in 1980 by 1 050 MW, an increase of almost 50% over the 1977 level of 2 140 MW. Additions would include hydro, oil and coal-fired thermal plus nuclear generation. The Mactaquac hydro station on the Saint John River was increased by 220 MW with the installation of the fifth and sixth units in 1979; a 200-MW unit capable of burning oil or coal was to be added in 1979 to the Dalhousie thermal station.

The first nuclear power station in the Maritimes was under construction at Point Lepreau, west of Saint John, on the north shore of the Bay of Fundy. Initial operation of the first 630-MW CANDU unit was scheduled for 1980. Provision was made for a second unit to be installed in the future to help reduce the province's dependence on high cost fossil fuels to produce electricity.

In 1977 the third and last 335 MW generating unit was installed at the Coleson Cove oil-fired station. Of the 1 005 MW capacity, 400 MW are committed for export to New England for a decade from 1976.

Planning for reinforcement of the provincial power grid is well under way. The existing system will eventually have an overlay at 345 kV for reinforcement of major north-south transmission and will connect the nuclear station in southwestern New Brunswick with load centres. The first stage of this planned expansion is a 345-kV transmission line between Coleson Cove and the substation at Salisbury serving Moncton. This is also the terminal for the reinforced Nova Scotia/New Brunswick interconnection to be completed in 1979. Construction began on the 345-kV line between St-André and the Eel River terminal. The latter is the termination point of the Hydro-Québec intertie and the new Dalhousie generating unit. A second 345-kV line of 116 km connecting Coleson Cove to the Keswick Switching Centre was completed during 1977 and a 345-kV connection to Point Lepreau was finished in 1978.

13.10.5 Quebec

Over 99% of Quebec's electrical energy supply is generated hydraulically. Hydro-Québec's current generation expansion program is designed to meet an average annual growth of 7.7% in peak demand.

There were significant changes in Hydro-Québec's generation planning during 1978. Construction on the LG-2 site of the James Bay project was more rapid than originally estimated and the first four units were expected to be in service during 1979 rather than 1980. Installation of a further four units of the 16-unit LG-2 plant was also being accelerated. However, the 1 140 MW of the planned LG-1 site was being deferred three years to come into service in 1986-87. Two generating units were to be added to each of LG-3 and LG-4 for additional peak capacity of 970 MW as substitutes for LG-1. It is planned that four 247-MW units will also be brought into service in 1985 at the Manic 5 site. Phase I of the James Bay project, with an output of 10 269 MW, will now cost an estimated \$15.1 billion, \$1.1 billion less than estimated earlier.

The Gentilly II nuclear plant was deferred by two years to an in-service date of 1981. Completion of AECL's La Prade heavy water plant was also indefinitely deferred during the year, due to an oversupply of heavy water.

Included in the expansion program was a pumped storage facility northeast of Quebec City at Lac Delaney, one of the few of its type in Canada and one of three considered by Hydro-Québec. The concept of pumped storage involves the use of relatively low-cost energy during off-peak periods to pump water into higher storage areas for use in producing electricity during peak power demand times. Although it takes an estimated 1.4 kWh of energy during off-peak service to produce 1 kWh of energy during the peak periods, development of these facilities is worthwhile because of the

relatively greater value of energy during the peak period. These storage facilities are less expensive to develop and closer to major provincial loads than the large hydroelectric projects in the northern part of the province. Capacity of each of the three pumped storage sites would be about 2000 MW. Others under consideration were Lac Proulx near Low, 56 km north of Ottawa, and Lac Lois, north of Quebec City on the Ste-Anne River system.

In 1978 Hydro-Québec negotiated a new interconnection agreement with Ontario Hydro for the sale of 15 billion kWh of firm energy over a period of five years. The main changes from the previous agreement are a revision of the capacity charge and a change in the method of pricing. The price of energy is 80% of what it would be if Ontario Hydro were to generate electricity from steam, including the cost of delivery. Under the old agreement, the energy price based on a shared-saving formula was the average of what it cost Ontario Hydro to generate it from steam plants and what it cost Hydro-Québec to deliver it. Hydro-Québec also undertook negotiations on a new interconnection agreement with New Brunswick Power. Hydro-Québec and the New York State Power Authority entered into an interconnection agreement for mutual assistance in case of emergency and for the purchase and sale of surplus capacity and energy. Late in 1978 the NEB approved an export licence covering this agreement.

Construction of the Manicouagan-Outardes hydro complex was completed when the last three 151.3 MW units were installed at the Outardes II station in 1978. Outardes II is Hydro-Québec's third development on the Outardes River and will replace the 50 MW development at Chute-aux-Outardes. Construction continued on the 630-MW single-unit CANDU nuclear station at Gentilly II.

The forecast deficit of generating capacity during 1978 and 1979 was to be met by the purchase of power and the installation of gas turbine units. An additional 240 MW of peaking capacity was to be supplied by installation in 1979 of a four-unit combustion turbine station, La Citière near Montreal. Power purchases were expected to include 150 MW from Alcan, 200 MW from New Brunswick Power and 350 MW from other sources.

In the Abitibi network, which was to remain isolated from the main system until 1979, a 54-MW combustion turbine unit was put in service at the end of 1976 and two more in 1977, for a total capacity of 180 MW. Ontario Hydro was to supply 100 MW until 1979. Production of the Abitibi hydro plant was to be enhanced by diversion from the Cabonga reservoir.

Electricity's share of the energy market in Quebec is expected to increase because of its availability and certainty of supply compared with oil, and it has been forecast that by 1990 there will be significant substitution of electricity for other energy forms in home heating.

Ontario

13.10.6

Total electrical energy available for use in 1978 was above that for 1977. Energy demand showed increases in residential, commercial and industrial sectors. Production was from hydro, nuclear units and fossil fuels.

Ontario imported 12.8 TWh of electric power in 1977. Net exports to the US of 8.5 TWh (9% of total generation) and exports to other provinces (0.4 TWh) resulted in a net import of 2.7 TWh or about 2.8% of electrical energy consumed within the province.

In 1977 Ontario Hydro added the second and third of four 800-MW units at the Bruce nuclear power station, the second 37 MW hydroelectric unit at Arnprior, and an 11-MW gas turbine unit at the Bruce heavy water plant to its installed capacity.

In 1978 the seventh and eighth units at the Nanticoke generating station were brought into service, bringing the station's total capacity up to 4000 MW. The fourth and final unit of the 3200 MW Bruce A plant produced its first power, and construction activity is now centred on the twin station, Bruce B.

In northwestern Ontario, the coal-fired Thunder Bay plant that came on stream in 1978 was expected to add 300 MW in two units in 1980. The Thunder Bay plant will use coal from the Prairie provinces delivered via the new \$60 million Thunder Bay terminal

completed in 1978. Three train-loads of western coal a week, destined for use at the Nanticoke generating station, are now unloading at the new terminal. With the new transportation system Western Canada will be a significant source of coal supply for Ontario Hydro thermal generating plants by the early 1980s. CNR will transport from the Luscar mine in Alberta and CPR will ship coal from the Byron Creek mine in British Columbia. At Thunder Bay, the coal will be loaded into ships bound for a blending facility at the 4000 MW generating station at Nanticoke.

Great Lakes Power Corp. of Sault Ste Marie began construction of a 54 MW hydroelectric plant on the St. Mary's River in Sault Ste Marie, scheduled to go into service in 1982, at an estimated cost of \$95 million.

Ontario Hydro decided to stop construction and store the components of the second half of the heavy water plant at the Bruce D nuclear power development until an additional source of heavy water supply is required. Construction of the first half of the plant, more than 80% completed, was subject to further consideration following completion of a review of the nuclear portion of the generation program.

The Pickering A plant proved to be one of the world's top performing nuclear stations for the third year in a row and an irradiated fuel bay was commissioned at the plant in 1978. In July 1978 construction began on the 3600 MW Darlington nuclear plant, followed by an announcement that Ontario Hydro recommended acquisition of a new site on the north channel of Lake Huron for an energy centre. Timing of the latter project is dependent on the generation program review.

Great Lakes Power Co. proposed to install three 18 MW units in 1981 at a hydroelectric station to be called St. Mary's in northwestern Ontario.

13.10.7 Manitoba

A federal loan of \$193 million and an earlier \$244 million provided for the Nelson River development will assist in movement of power from Manitoba's Nelson River sites.

The first and second 98-MW units at the Long Spruce hydro project were installed in 1977. Long Spruce, the second major development on the Nelson River, was expected to have an ultimate capacity of 980 MW over 10 units by 1980.

The main components of the Churchill River diversion were completed in the early part of 1977. Up to 850 000 dm³ of water a second can now be diverted from the Churchill to the Nelson. However, another major hydro development at Limestone, downstream from Long Spruce, was deferred for final completion to 1989, with the first unit scheduled for 1984.

Additional generation capacity totalled 476 MW during 1978, when four 98-MW units at the Long Spruce station, and three 28-MW units at Jenpeg were brought into service. Three more 98-MW units at Long Spruce and two more 28-MW units at Jenpeg were scheduled to come into service in 1979.

Manitoba Hydro has identified eight possible sites for nuclear generation. However, studies have been suspended since nuclear generation may now not be required until the mid-1990s.

The capacity of the Nelson River HVDC transmission system was increased by adding a new converter station at Henday near the Limestone site. This involved construction of additional DC transmission lines between Long Spruce and Henday and the extension of a HVDC circuit from Radisson to Henday. Expansion of the first bipole was completed during 1977 expanding its capacity by 270 MW to 1620 MW. Construction of the second bipole continues, with the first phase having come into service in late 1978. The second phase is to come on stream in 1989 (900 MW each).

Changes in Manitoba Hydro's expansion plans were the result of continued small load growth. The completion of Limestone was delayed and the units were set at 117 MW each. This rating will apply until the Conawapa site is developed. Then the Limestone units will be derated to approximately 110 MW. There were no changes in policy on generation mix — almost all energy will be produced from hydro when conditions are normal, with thermal generation to make up any deficiency.

Various transmission projects were completed in 1978: a ± 500 -kV DC line from Henday (the northern terminal of Bipole II of the HVDC transmission system) to

Radisson (the northern terminal for Bipole I); a 900-MW inverter at Dorsey (the southern terminal for the HVDC system); and 900 MW rectifier equipment at Henday. A 230-kV interconnection with Saskatchewan (The Pas to Squaw Rapids) was to be completed in 1979. A 500-kV interconnection with Northern States Power (Dorsey-Forbes) was scheduled to be in service by 1980.

Saskatchewan

13.10.8

During 1977 a sixth unit (292.5 MW) was installed in the Boundary Dam coal-fired station, bringing plant capacity to 874.5 MW.

There was no generation expansion in 1978. Transmission line additions included a 230-kV transmission line from Assiniboia to a new thermal plant at Poplar River. To complete transmission for the new capacity at Poplar River, a 230-kV line to Regina will be constructed and the existing Regina-Wolverine line will be upgraded to 230 kV. A 230-kV tie with North Dakota was planned for 1981 and a HVDC asynchronous tie with Alberta was under study.

Future generation expansion is based on an annual growth forecast of about 5% in energy requirement and 4% in capacity but industrial sales are expected to grow at a faster rate than other categories.

The next planned addition to system capacity was the first 300-MW unit in the Coronach coal-fired station on the Poplar River, scheduled for service in 1980. Further generation expansion was to include a second unit at this site, and a hydroelectric development of three 84-MW units on the Saskatchewan River near Nipawin.

Energy consumption for Saskatchewan in 1978 was up 6.3% over 1977, as a result of substantial increases (10% to 13%) in the residential, farm, small commercial and oil fields sectors. Industrial sales in 1978 nearly maintained the high levels achieved in 1977 when they grew 15%. Saskatchewan Power does not expect industrial demand to grow at past rates. Forecasts are based on new development in heavy oil, Arctic oil and natural gas pipelines. A stable population, appliance saturation and conservation (partially offset by increased electric heating) will help limit future growth.

Alberta

13.10.9

About half of Alberta's electricity is supplied by investor-owned utilities, the remainder by municipal utilities. Calgary Power Ltd. supplies about two-thirds of the electricity and the other large utility is Alberta Power Ltd. Development of the electricity supply system is co-ordinated by an Alberta electric utility planning council (made up of utility personnel) and regulated by the Alberta Energy Resources Conservation Board (AERCB). The electric utility planning council forecast in 1977 that the load growth for the Alberta interconnected system would grow at the rate of 8.3% a year during the next decade, and at about 6.7% a year to the year 2006.

Production expansion on the Calgary Power system during 1977 consisted of a fourth unit at the Sundance coal-fired plant and in 1978 the fifth 375-MW unit was installed. Calgary Power received provincial government approval to construct and operate the Keephills thermal station about 10 km southeast of the Sundance plant on Lake Wabamun. The Keephills plant will consist of two 375-MW coal-fired units to be fuelled from the extended Highvale mine and is scheduled for service in 1983-84.

Mining at Highvale was scheduled to reach 8.6 million tonnes in 1981, when Sundance reaches full generation capacity of 2 100 MW, and 12 million in 1985 when the Keephills station is fully operational. Highvale should then be Canada's largest operating coal mine.

New transmission line capacity in 1977 and 1978 on the Calgary Power system consisted of: a 138-kV line from Edson to Coal Valley; a 240-kV tie line to North Calgary; an additional interconnection with Edmonton Power, connecting with a Calgary Power line from Wabamun to Edmonton; and work under way on another interconnection with Alberta Power near Edgerton, via a 138-kV line from the Metiskow substation to Lloydminster. During 1978 Calgary Power put into operation a section of the 240-kV line between the Sundance plant and the Benalto substation, and a 240-kV line from Calgary to Lethbridge. Calgary Power and British Columbia Hydro

and Power Authority signed a letter of intent to construct and operate a 500-kV intertie between Calgary and Cranbrook, to be operational in 1983.

There was no increase in Alberta Power's production capacity during 1977-78 but construction continued on the fifth 375-MW unit at the Battle River coal-fired plant, scheduled for service in 1981.

The AERCB approved an application by Alberta Power to build a coal-fired plant near Sheerness. This plant will consist of two 375-MW units with the first unit to be commissioned in 1985 and the second in 1986. The Sheerness plant will have more than enough capacity for Alberta Power's needs, and commercial arrangements for the remaining capacity will be negotiated with Calgary Power and Edmonton Power.

Alberta Power's 280-km transmission line from the provincial electric grid at Mitsue near Slave Lake to the Syncrude oil sands operation at Mildred Lake was converted to the planned 240-kV level in 1977. This line operated at 144 kV during 1976 to connect the Syncrude site and the rapidly expanding town of Fort McMurray to the provincial grid. Other 144-kV line additions to the Alberta Power system in 1977 and 1978 were: 128 km from the Swan Hills area to the Sturgeon substation south of Valleyview; 80 km paralleling an existing circuit from Manning to Keg River; and 48 km to provide additional capacity and reliability to the Vermilion-Lloydminster area; 153 km from the Monitor substation to Empress to provide increased reliability to southeast Alberta; 61 km from Metiskow to Lloydminster. The first 45-km section of a 180-km line from Vegreville to Bonnyville went into service mid-year from Vilna to Hairy Hill at 75 kV (in late 1979, the line was to carry 144 kV).

Edmonton Power's generating system was increased in 1977 by 171 MW with a third generator added at the Clover Bar station. A fourth 171-MW gas-fired thermal unit was installed in 1978.

During 1977 Edmonton Power built a 240/72-kV terminal station in the west end of Edmonton linked to the provincial grid at 240 kV via the Calgary Power system. Two 240-kV transmission interconnections were undertaken in 1978; one connects the Bellamy terminal station by a double circuit line and underground cable and the second a 240-kV tap to the Petrolia substation. A 13-km stretch of 240-kV line was constructed in 1979 between the Jasper terminal and Calgary Power's station.

At Mildred Lake, near Fort McMurray, AEC Power Ltd., a subsidiary of Alberta Energy Corp. and Calgary Power Ltd., completed a 260 MW thermal generating station to supply power and process heat to the nearby Syncrude Oil Sands mining and refining project. Commercial operation was expected to begin in 1978.

13.10.10 British Columbia

Production expansion during 1977-78 included the third and fourth 434-MW units at the Mica Dam hydro project which now has a capacity of 1 736 MW. Installation of a 53.9-MW gas turbine unit at the Keogh station near Port Hardy was the only addition to thermal capacity in 1978.

British Columbia Hydro and Power Authority has three major hydro projects under construction: Seven Mile on the Pend-d'Oreille River, Site I on the Peace River, and Revelstoke on the Columbia River. The Site I project was expected to have an installed capacity of 700 MW in four 175-MW units, the first two to be in service in 1979 and the other two in 1980. Construction of the Revelstoke project began in 1977: three 450-MW units were planned for service in 1982 and a fourth in 1983; provision will be made for two additional units for an ultimate capacity of 2 700 MW.

The tenth and final unit of the Gordon M. Shrum hydro project on the Peace River was scheduled for service in 1980. This 300-MW unit will increase the capacity of the plant to 2 416 MW.

The north coast communities of Kitimat, Terrace and Prince Rupert were linked with BC Hydro's provincial power grid through a 500-kV line between the Williston and Skeena substations. In 1978 BC Hydro changed the route of a twin 500-kV transmission line from Kelly Lake to Nicola substation because of public concern over range land.

In January 1979, BC Hydro advanced the construction of a second 500-kV "backbone" transmission line extending 136 km from Victoria north to Qualicum Bay

by five years to provide security of service and increased capacity to Vancouver Island. It will follow the existing right-of-way of another 500-kV line recently completed.

BC Hydro forecast in November 1978 that electricity demand would grow at an average annual rate of 6.4% over the next 11 years. The forecast reflects supply to the West Kootenay Power and Light Co. starting in the fall of 1979. Excluding the West Kootenay system, the estimated rate of growth for the same period would be 6%.

The territories

13.11

The federally owned Northern Canada Power Commission is the major supplier of electricity in this region.

Additions to generation were 2 500 kW of diesel capacity in 1977 at Pine Point, NWT and 7 500 kW in 1978. Hydro development remained suspended as a result of decline in load growth in Northwest Territories, and pending clarification of markets and development planning in Yukon. Two 100 kW packaged portable gas turbine units became available for emergency standby use at smaller plants and a 2 500 kW gas turbine unit acquired for standby in 1977 was placed in temporary service at Fort Smith. Three internal combustion units of 2.5 MW were added in 1978. Future expansion plans included 2.1 MW in 1979, 5.5 MW in 1980 and 11.4 MW in 1981, all internal combustion units.

Electricity demand growth during 1978 increased by 7.2% in Northwest Territories and by 24% in Yukon. The growth rate in Northwest Territories is in line with that of previous years, but is expected to decline in the future with higher energy costs. The unusually high growth in Yukon was due to the return to full operation of major mining customers after a lengthy strike.

Late in 1978, the federal government announced a subsidy to non-urban residential electric customers in Yukon and Northwest Territories. The program subsidized the first 700 kWh of residential consumption in smaller communities to the rate existing in Whitehorse for Yukon communities and Yellowknife for NWT communities.

Electric power statistics

13.12

Electric power statistics (Tables 13.17 and 13.18) are based on reports of all electric utilities and all industrial establishments generating energy, whether or not any is sold, and therefore show the total production and distribution of electric energy in Canada. Utilities are defined as companies, commissions, municipalities or individuals whose primary function is to sell most of the electric energy that they have either generated or bought. Industrial establishments are defined as companies or individuals generating electricity mainly for use in their own plants.

Source

13.1 - 13.12 Energy Policy Co-ordination, Department of Energy, Mines and Resources.

Tables

..	not available	1 000 000 000 000 = 10 ¹²	tera	T
...	not appropriate or not applicable	1 000 000 000 = 10 ⁹	giga	G
—	nil or zero	1 000 000 = 10 ⁶	mega	M
--	too small to be expressed	1 000 = 10 ³	kilo	k
e	estimate	100 = 10 ²	hecto	h
p	preliminary	10 = 10 ¹	deca	da
r	revised			

certain tables may not add due to rounding

13.1 Canada's oil imports, by country, 1977 and 1978

Country	Volume		Value	
	1977 ^f '000 m ³	1978 '000 m ³	1977 \$'000	1978 \$'000
Algeria	88	651	8,501	56,346
Ecuador	441	653	37,088	58,028
Egypt, Arab Republic of	364	897	32,080	79,912
French Africa, n.e.s.	—	—	—	—
Gabon	187	589	14,067	52,018
Iran	6 589	6 549	535,063	590,220
Iraq	1 334	1 414	109,331	129,379
Kuwait	233	—	20,052	—
Libya	—	—	—	—
Mexico	55	140	4,878	13,295
Netherlands Antilles	359	—	29,017	—
Nigeria	423	—	37,390	—
Saudi Arabia	8 868	8 016	711,710	749,156
Trinidad and Tobago	223	138	17,808	12,157
Union of Soviet Socialist Republics	270	—	23,783	—
United Arab Emirates	165	—	14,176	—
United Kingdom	92	—	7,283	—
United States	3 102	5 192	283,875	527,897
Venezuela	15 193	12 581	1,317,540	1,197,878
Yemen	71	—	5,853	—
Total, all countries	38 057	36 820	3,209,495	3,466,286

13.2 Federal energy R&D expenditures, 1978-79 to 1980-81

Item	1978-79		1979-80 ^e		1980-81 ^e	
	\$'000	%	\$'000	%	\$'000	%
Renewable energy	14,452	10	19,351	12	20,749	13
Energy conservation	12,482	8	12,462	8	12,262	8
Fossil fuels	11,383	8	12,613	8	12,184	8
Transportation and transmission of energy	6,105	4	6,298	4	6,298	4
Nuclear energy	105,807	70	106,373	67	105,925	66
Co-ordination and monitoring	456	--	798	1	1,375	1
Total	150,685	100	157,895	100	158,793	100

13.3 Trade in energy, 1966 and 1976-78 (million dollars)

Item	1966 ^f	1976 ^f	1977	1978
Petroleum				
Exports	322	2,287	1,751	1,577
Imports	299	3,280	3,209	3,470
Balance	23	-993	-1,458	-1,893
Petroleum products ¹				
Exports	26	549	635	763
Imports	158	180	242	297
Balance	-132	369	393	466
Natural gas				
Exports	109	1,616	2,028	2,190
Imports	18	9	—	—
Balance	91	1,607	2,028	2,190
Coal				
Exports	14	557	596	690
Imports	141	543	617	633
Balance	-127	14	-21	57

13.3 Trade in energy, 1966 and 1976-78 (million dollars) (concluded)

Item	1966 ^r	1976 ^r	1977	1978
Coal products				
Exports	2	10	13	14
Imports	18	37	58	79
Balance	-16	-27	-45	-65
Electric energy				
Exports	16	162	377	479
Imports	10	9	15	2
Balance	6	153	362	477
Radioactive ores				
Exports	36	67	75	207
Imports	—	—	—	—
Balance	36	67	75	207
Elements and isotopes				
Exports	8	186	161	451
Imports	6	12	28	12
Balance	2	174	133	439
Total				
Exports	533	5,434	5,636	6,371
Imports	650	4,070	4,169	4,493
Balance	-117	1,364	1,467	1,878

^rContains values of various petroleum products destined for non-energy consumption such as lubricating oils and grease, asphalt and petrochemical feedstocks.

13.4 Petroleum, supply and demand, 1965, 1977 and 1978 (thousand cubic metres a day)

Item	1965	1977	1978 ^P
Supply			
Production	146.2	255.2	250.2
Crude oil	139.1	230.6	226.9
Gas plant, liquefied petroleum gas	7.1	24.6	23.3
Imports	88.5	115.4	107.1
Crude oil	62.8	106.2	98.4
Products	25.7	9.2	8.7
Total, supply	234.7	370.6	357.3
Demand			
Domestic demand	186.4	286.4	295.7
Motor gasoline	56.9	98.0	101.5
Diesel fuel	15.8	33.3	35.8
Light fuel oil	34.7	41.3	41.0
Heavy fuel oil	39.2	45.2	42.7
Other (including refinery use and loss)	39.8	68.6	74.7
Exports	48.1	84.7	76.9
Crude oil	46.9	51.6	42.3
Products	1.2	33.1	34.6
Total, demand	234.5	371.1	372.6
Inventory change	0.2	-0.5	-15.3

13.5 Natural gas, supply and demand, 1965, 1977 and 1978 (million cubic metres)

Item	1965	1977	1978
Supply			
Net production	40 844.4	102 470.3	99 561.0
Marketable pipeline gas ¹	29 141.0	73 731.9	70 094.4
Imports	501.2	—	—
Total, supply	29 642.2	73 731.9	70 094.4
Demand			
Domestic demand	16 225.6	44 522.9	45 093.4
Residential	5 303.8	8 892.1	9 319.9
Commercial	8 061.8	8 424.7	9 025.1
Industrial	2 860.0	23 231.7	23 400.3
Other (including pipeline losses)	1 614.1	3 974.4	3 348.1
Exports	11 459.9	28 319.3	24 960.1
Total, demand	29 299.6	72 842.2	70 053.5
Storage and line pack increase	342.6	889.7	40.9

¹After deduction of field and plant use/loss, processing shrinkage.

13.6 Crude oil and equivalent production, by province, 1975-78 (thousand cubic metres a day)

Item and province	1975	1976	1977	1978P	Percentage change 1977-78
Crude oil	220	201	204	199	-2.5
Alberta	185	168	167	165	-1.2
Saskatchewan	26	24	27	26	-3.7
British Columbia	6	6	6	5	-16.7
Manitoba	2	2	2	2	—
Other	1	1	1	1	—
Pentanes plus/condensate	24	21	22	19	-13.6
Alberta	23	20	21	18	-14.3
Saskatchewan	—	—	—	—	—
British Columbia	1	1	1	1	—
Synthetic crude oil					
Canada — Alberta	7	8	7	9	+28.6
Total	251	230	233	227	-2.6
Alberta	215	196	195	192	-1.5
Saskatchewan	26	24	27	26	-3.7
British Columbia	7	7	7	6	-14.3
Manitoba	2	2	3	2	-33.3
Other	1	1	1	1	—

13.7 Wells drilled, by type, region and depth, selected years, 1960, 1976-78

Region and type	1960		1976 ^r		1977		1978	
	No.	m	No.	m	No.	m	No.	m
Western Canada								
Alberta	1,692	3 192 547	5,544	4 796 991	5,799	5 204 947	6,056	6 007 737
New field wildcats	338	663 641	336	475 244	321	470 830	230	352 245
Other exploratory	223	356 945	1,820	1 489 092	2,013	1 844 590	2,154	2 439 698
Development	1,131	2 171 961	3,388	2 832 655	3,465	2 889 527	3,672	3 215 794
British Columbia	143	229 608	173	279 494	305	490 324	386	635 841
New field wildcats	60	111 501	6	16 305	12	20 406	22	59 413
Other exploratory	11	16 992	77	131 662	118	207 016	179	297 232
Development	72	101 115	90	131 527	175	262 902	185	279 196
Saskatchewan	602	720 449	252	226 297	530	434 686	983	720 351
New field wildcats	113	142 801	51	56 876	62	57 331	144	117 635
Other exploratory	28	30 237	90	73 650	200	143 173	321	224 799
Development	461	547 411	111	95 771	268	234 182	518	377 917
Manitoba	67	44 790	14	11 161	11	9 359	16	13 425
New field wildcats	10	9 298	10	7 400	1	762	4	4 360
Other exploratory	3	1 942	3	3 011	9	7 987	3	2 699
Development	54	33 550	1	750	1	610	9	6 366
Yukon and Northwest Territories	32	32 299	29	83 807	26	80 766	17	51 795
New field wildcats	32	32 299	16	54 222	18	57 312	10	32 124
Other exploratory	—	—	4	3 885	—	—	—	—
Development	—	—	9	25 700	8	23 454	7	19 671
Total, Western Canada	2,536	4 219 693	6,012	5 397 750	6,671	6 220 082	7,458	7 429 149
New field wildcats	553	959 540	419	610 047	414	606 641	410	565 777
Other exploratory	265	406 116	1,994	1 701 300	2,340	2 202 766	2,657	2 964 428
Development	1,718	2 854 037	3,599	3 086 403	3,917	3 410 675	4,391	3 898 944
Eastern Canada								
Ontario	307	123 877	144	73 272	165	89 448	143	108 919
New field wildcats	39	20 846	40	26 459	46	29 357	40	26 741
Other exploratory	55	33 479	15	8 862	8	4 683	26	34 561
Development	213	69 552	89	37 951	111	55 408	77	47 617
Quebec	6	1 380	4	8 543	6	13 233	6	18 093
New field wildcats	5	1 307	4	8 543	6	13 233	5	14 743
Other exploratory	—	—	—	—	—	—	1	3 350
Development	1	73	—	—	—	—	—	—
Atlantic provinces	3	6 969	2	3 271	—	—	—	—
New field wildcats	3	6 969	2	3 271	—	—	—	—
Other exploratory	—	—	—	—	—	—	—	—
Development	—	—	—	—	—	—	—	—
East Coast offshore	—	—	10	22 793	2	7 742	7	26 242
New field wildcats	—	—	10	22 793	2	7 742	5	19 689
Other exploratory	—	—	—	—	—	—	2	6 553
Total, Eastern Canada	316	132 226	160	107 879	173	110 423	156	153 254
New field wildcats	47	29 122	56	61 056	54	50 332	50	61 173
Other exploratory	55	33 479	15	8 862	8	4 683	29	44 464
Development	214	69 625	89	37 951	111	55 408	77	47 617
Canada	2,852	4 351 919	6,172	5 505 629	6,844	6 330 505	7,614	7 582 403
New field wildcats	600	988 662	475	671 103	468	656 973	460	626 950
Other exploratory	320	439 595	1,999	1 710 162	2,348	2 207 449	2,686	3 008 892
Development	1,932	2 923 662	3,688	3 124 354	4,028	3 466 083	4,468	3 946 561

13.8 Wells drilled, by type and region, 1977 and 1978

Region	Oil		Gas		Dry		Total	
	1977	1978	1977	1978	1977	1978	1977	1978
Western Canada	1,151	1,830	3,572	3,560	1,948	2,068	6,671	7,458
Alberta	745	975	3,333	3,330	1,721	1,751	5,799	6,056
Saskatchewan	359	772	83	41	88	170	530	983
British Columbia	38	72	148	186	119	128	305	386
Manitoba	9	10	—	—	2	6	11	16
Yukon and Northwest Territories	—	1	8	3	18	13	26	17
Eastern Canada	9	11	93	71	71	74	173	156
Ontario	9	11	93	70	63	62	165	143
Quebec	—	—	—	—	6	6	6	6
Atlantic provinces	—	—	—	—	—	—	—	—
East Coast offshore	—	—	—	1	2	6	2	7
Total	1,160	1,841	3,665	3,631	2,019	2,142	6,844	7,614

13.9 Oil refining, by province, 1976, 1977 and 1978

Year and province or territory	Existing refineries			New refineries planned or under construction	
	No.	Capacity '000 m ³ /d	% of total	Capacity '000 m ³ /d	Scheduled for completion
1976					
Newfoundland	2	18.1	5.0	—	—
Nova Scotia	3	28.9	8.1	—	—
New Brunswick	1	39.7	11.2	—	—
Quebec	7	102.7	28.8	—	—
Ontario	7	87.4	24.5	42.1	1977, 1978
Manitoba	1	4.8	1.4	—	—
Saskatchewan	2	6.4	1.8	—	—
Alberta	6	42.9	11.9	—	—
British Columbia	7	26.0	7.2	—	—
Northwest Territories	1	0.5	0.1	—	—
Total	37	357.4	100.0	42.1	1977, 1978
1977					
Newfoundland	2	18.1	4.7	—	—
Nova Scotia	3	29.4	7.7	—	—
New Brunswick	1	39.7	10.3	—	—
Quebec	7	102.7	26.7	—	—
Ontario	8	112.6	29.3	15.1	1978
Manitoba	1	4.8	1.3	—	—
Saskatchewan	2	6.4	1.7	—	—
Alberta	6	44.0	11.4	—	—
British Columbia	7	26.1	6.8	—	—
Northwest Territories	1	0.5	0.1	—	—
Total	38	384.3	100.0	15.1	1978
1978					
Newfoundland	2	18.1	4.5	—	—
Nova Scotia	3	29.4	7.4	—	—
New Brunswick	1	39.7	9.9	—	—
Quebec	7	98.3	24.5	—	—
Ontario	9	130.0	32.4	—	—
Manitoba	1	4.8	1.2	—	—
Saskatchewan	2	8.5	2.1	—	—
Alberta	6	44.7	11.2	—	—
British Columbia	7	26.9	6.7	—	—
Northwest Territories	1	0.5	0.1	—	—
Total	39	400.9	100.0	—	—

13.10 Coal production¹, by type and province, 1976-78

Type and province	1976		1977		1978	
	'000 t	\$'000	'000 t	\$'000	'000 t	\$'000
Bituminous	14 388	568,312	15 301	623,613	17 141	718,469
Nova Scotia	2 000	57,755	2 164	81,733	2 650	116,322
New Brunswick	296	5,881	278	6,168	315	10,042
Alberta	4 583	206,919	4 274	196,026	5 115	212,616
British Columbia	7 509	297,757	8 585	339,686	9 061	379,489
Sub-bituminous						
Alberta	6 410	23,248	7 902	29,962	8 278	36,135
Lignite						
Saskatchewan	4 678	15,537	5 478	20,762	5 058	21,520
Total	25 476	607,100	28 681	674,337	30 477	776,124

¹Includes production of clean coal and shipments of raw coal from the mine.

13.11 Coal, supply and demand, 1965, 1977 and 1978 (thousand tonnes)

Item	1965	1977	1978
Supply			
Net production	10 512	28 682	30 477
Imports	14 765	15 419	14 119
Total, supply	25 277	44 101	44 596
Demand			
Consumption	23 262	30 896	31 738
Electrical utilities	6 985	22 442	22 915
Metallurgical use	5 326	6 664	6 909
General industry	10 951	1 790	1 914
Exports	1 237	12 387	14 000
Total, demand	24 499	43 283	45 738
Inventory change	+ 778	+ 818	- 1142

13.12 Fuel used by electrical utilities to generate power, by province, 1977

Province or territory	Coal		Petroleum fuels		Gas		Uranium	
	Quantity '000 t	Value \$ '000	Quantity m ³	Value \$ '000	Quantity m ³	Value \$ '000	Quantity '000 t	Value \$ '000
Newfoundland	—	—	137	10,520	—	—	—	—
Prince Edward Island	—	—	153	10,584	—	—	—	—
Nova Scotia	472	16,921	964	57,058	—	—	—	—
New Brunswick	198	4,392	1 118	74,980	—	—	—	—
Quebec	—	—	67	5,526	—	—	1	23
Ontario	8 856	306,998	487	32,663	1 286	78,947	473	33,362
Manitoba	1 115	13,486	26	3,112	3	162	—	—
Saskatchewan	4 301	20,856	7	556	404	17,935	—	—
Alberta	7 332	24,540	4	366	1 159	31,798	—	—
British Columbia	—	—	69	6,592	16	564	—	—
Yukon	—	—	6	867	—	—	—	—
Northwest Territories	—	—	52	6,464	—	—	—	—
Canada	22 274	387,193	3 090	209,288	2 868	129,406	474	33,385

13.13 Installed generating capacity, as at Dec. 31, 1977 and 1978 (megawatts)

Year and province or territory	Steam		Gas turbine	Internal combustion	Total thermal	Hydro	Total
	Conventional	Nuclear					
1977							
Newfoundland (incl. Labrador)	353	—	170	72	595	6 376	6 971
Prince Edward Island	71	—	41	7	118	—	118
Nova Scotia	1 164	—	205	1	1 370	160	1 530
New Brunswick	1 654	—	23	5	1 683	680	2 362
Quebec	655	266	162	77	1 161	15 026	16 186
Ontario	11 566	4 800	451	10	16 827	7 084	23 911
Manitoba	447	—	24	18	489	2 702	3 191
Saskatchewan	1 085	—	147	11	1 243	567	1 810
Alberta	3 535	—	211	46	3 793	718	4 511
British Columbia	1 319	—	296	126	1 741	7 392	9 133
Yukon	—	—	—	43	43	58	101
Northwest Territories	1	—	2	107	109	47	156
Canada, 1977	21 850	5 066	1 732	523	29 171	40 810	69 981
Net additions, 1977	919	1 600	173	29	2 720	1 287	4 007
Percentage increase, over 1976	4.4	46.2	11.1	5.9	10.3	3.3	6.1
1978P							
Newfoundland (incl. Labrador)	353	—	170	72	595	6 376	6 971
Prince Edward Island	71	—	41	7	119	—	119
Nova Scotia	1 164	—	205	1	1 370	360	1 730
New Brunswick	1 654	—	23	5	1 682	680	2 362
Quebec	655	266	162	77	1 160	15 480	16 640
Ontario	12 566	5 600	451	10	18 627	7 084	25 711
Manitoba	447	—	24	18	489	3 178	3 667
Saskatchewan	1 085	—	147	11	1 243	567	1 810
Alberta	4 120	—	294	46	4 460	718	5 179
British Columbia	1 319	—	296	126	1 741	7 826	9 567
Yukon	—	—	—	43	43	58	101
Northwest Territories	1	—	2	115	118	47	164
Canada, 1978	23 435	5 866	1 815	531	31 647	42 374	74 021
Net addition, 1978	1 585	800	83	8	2 476	1 564	4 040
Percentage increase, over 1977	7.3	15.8	4.8	1.5	8.5	3.8	5.8

13.14 Capability and firm power peak-load requirements, actual 1967 and 1974-77, and forecast 1978-82 (megawatts)

Item	Actual					Forecast				
	1967	1974	1975	1976	1977	1978	1979	1980	1981	1982
NET GENERATING CAPABILITY										
Hydroelectric	22 393	36 624	37 318	38 543	40 520	41 990	42 534	45 719	47 804	49 708
Steam, conventional	7 798	13 694	16 484	18 884	21 125	22 730	23 853	24 765	25 777	26 918
nuclear	167	1 775	2 284	2 284	3 950	4 369	5 651	6 509	7 025	8 057
Internal combustion	264	393	410	406	390	415	405	411	418	419
Gas turbine	748	1 156	1 437	1 783	1 808	1 982	2 235	2 513	2 589	2 654
Total, net generating capability	31 370	53 642	57 933	61 900	67 793	71 486	74 678	79 917	83 613	87 756
Receipts of firm power from United States	180	2	1	51	1	13	21	328	337	346
Deliveries of firm power to United States	95	394	228	656	705	534	536	536	489	488
Total, net capability	31 455	53 250	57 706	61 295	67 089	70 965	74 163	79 709	83 461	87 614
PEAK LOADS										
Firm power peak loads within Canada	27 812	42 528	45 995	49 399	51 811	55 001	57 746	61 585	65 444	69 691
Indicated shortages	—	—	192	138	190	360	420	480	443	485
Total, indicated peak loads within Canada	27 812	42 528	46 187	49 537	52 001	55 361	58 166	62 065	65 887	70 176
Indicated reserve	3 643	10 722	11 519	11 758	15 088	15 604	15 997	17 644	17 574	17 438

13.15 Electric energy generation, by fuel type, 1977 and 1978

Year and province or territory	Hydro		Thermal								Nuclear		Total generation GWh
	GWh	%	Coal	Oil		Gas		Total		GWh	%		
			GWh	%	GWh	%	GWh	%	GWh			%	
1977													
Newfoundland ¹	40 594	99.0	—	—	428	1.0	—	—	428	1.0	—	—	41 022
Prince Edward Island	—	—	—	—	385	100.0	—	—	385	100.0	—	—	385
Nova Scotia	794	13.8	973	16.9	3 992	69.3	—	—	4 965	86.2	—	—	5 759
New Brunswick	3 019	37.0	375	4.6	4 760	58.4	—	—	5 135	63.0	—	—	8 155
Quebec	82 743	99.6	—	—	247	0.3	5	—	252	0.3	65	0.1	83 059
Ontario	36 430	38.1	26 426	27.6	1 868	2.0	6 295	6.6	34 589	36.1	24 674	25.8	95 693
Manitoba	11 144	89.1	1 229	9.8	126	1.0	14	0.1	1 368	10.9	—	—	12 512
Saskatchewan	2 102	25.1	5 049	60.2	25	0.3	1 214	14.5	6 288	74.9	—	—	8 390
Alberta	1 484	8.4	12 399	69.8	33	0.2	3 840	21.6	16 272	91.6	—	—	17 756
British Columbia	41 259	95.7	—	—	1 059	2.5	805	1.9	1 864	4.3	—	—	43 124
Yukon	324	88.3	—	—	43	11.7	—	—	43	11.7	—	—	367
Northwest Territories	266	71.9	—	—	104	28.1	—	—	104	28.1	—	—	370
Canada	220 150	69.5	46 679	14.7	13 122	4.1	11 903	3.8	71 703	22.6	24 739	7.8	316 592
1978													
Newfoundland ¹	44 044	98.1	—	—	861	1.9	—	—	861	1.9	—	—	44 905
Prince Edward Island	—	—	—	—	209	100.0	—	—	209	100.0	—	—	209
Nova Scotia	772	12.6	1 051	17.1	4 309	70.3	—	—	5 360	87.4	—	—	6 132
New Brunswick	2 033	26.4	414	5.4	5 255	68.2	—	—	5 669	73.6	—	—	7 703
Quebec	85 442	99.4	—	—	494	0.6	10	—	504	0.6	—22	—	85 924
Ontario	39 170	38.3	25 640	25.1	1 812	1.8	6 108	6.0	33 560	32.8	29 464	28.8	102 194
Manitoba	16 983	97.2	440	2.5	45	0.3	5	—	490	2.8	—	—	17 474
Saskatchewan	2 548	28.8	5 055	57.2	25	0.3	1 215	13.7	6 295	71.2	—	—	8 843
Alberta	1 831	9.6	13 146	68.9	35	0.2	4 072	21.3	17 252	90.4	—	—	19 083
British Columbia	40 612	95.7	—	—	1 037	2.4	788	1.9	1 825	4.3	—	—	42 437
Yukon	324	87.8	—	—	45	12.2	—	—	45	12.2	—	—	369
Northwest Territories	275	71.6	—	—	108	28.1	—	—	108	28.1	—	—	384
Canada	234 034	69.7	46 988	14.0	13 209	3.9	11 982	3.6	72 178	21.5	29 442	8.8	335 654

¹Including export to Quebec of 32 105 GWh hydroelectric energy.

13.16 Electricity made available for use in Canada, 1977 and 1978 (thousand megawatt hours)

Item and year	Province or territory						
	Nfld.	PEI	NS	NB	Que.	Ont.	Man.
1977	7 673	452	6 124	7 983	101 679	98 405	12 369
1978	7 881	477	6 354	8 252	109 824	101 527	13 311
Percentage change	2.7	5.6	3.8	3.4	8.0	3.2	7.6
	Sask.	Alta.	BC	Yukon	NWT	Canada	
1977	8 082	17 503	38 532	367	370	299 540	
1978	8 723	19 034	40 024	369	384	316 161	
Percentage change	7.9	8.8	3.9	0.5	3.6	5.6	

13.17 Electric power generated by utilities and industrial establishments, 1976 and 1977 (gigawatt hours)

Year and province or territory	Total utilities	Industrial establishments	Total
1976			
Newfoundland	38 767	423	39 190
Prince Edward Island	445	—	445
Nova Scotia	5 257	405	5 662
New Brunswick	5 997	610	6 607
Quebec	65 569	12 143	77 712
Ontario	83 511	3 726	87 237
Manitoba	13 943	61	14 004
Saskatchewan	7 302	213	7 515
Alberta	15 165	615	15 779
British Columbia	27 457	11 086	38 543
Yukon	278	29	307
Northwest Territories	346	20	366
Canada	264 037	29 331	293 367
1977			
Newfoundland	40 543	478	41 022
Prince Edward Island	385	—	385
Nova Scotia	5 284	475	5 759
New Brunswick	7 597	557	8 155
Quebec	64 659	18 400	83 059
Ontario	91 513	4 180	95 693
Manitoba	12 445	67	12 512
Saskatchewan	8 145	245	8 390
Alberta	17 108	649	17 756
British Columbia	31 493	11 632	43 124
Yukon	339	28	367
Northwest Territories	351	20	370
Canada	279 862	36 731	316 592

13.18 Capital investment by electrical utilities, 1966-78¹ (million dollars)

Year	Construction			Total	Machinery equipment	Total
	Generation	Transmission distribution	Other structures			
1966	212	306	269	787	356	1,143
1967	441	294	140	875	390	1,265
1968	320	341	227	889	443	1,332
1969	478	315	63	856	546	1,403
1970	581	449	28	1,057	554	1,610
1971	572	472	36	1,079	668	1,747
1972	636	449	50	1,135	619	1,754
1973	808	539	69	1,417	827	2,244
1974	1,049	598	53	1,670	1,054	2,753
1975	1,691	874	96	2,661	1,296	3,957
1976	1,884	957	85	2,927	1,436	4,363
1977	—	—	—	3,462	1,722	5,184
1978	—	—	—	4,167	1,964	6,131

¹ Actual expenditures 1966-75; preliminary 1976; preliminary actual 1977; intentions 1978.**Sources**

13.1 - 13.18 Manufacturing and Primary Industries Division, Industry Statistics Branch, Statistics Canada, and Energy Policy Sector, Department of Energy, Mines and Resources.

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Scientific activities

14.1

Science and technology (S&T) is a term used to encompass activities which involve the generation, dissemination and initial application of new scientific knowledge and technology. Research and development (R&D) is creative work undertaken on a systematic basis to increase the stock of scientific knowledge and technology.

Federal expenditures

14.1.1

Total government expenditures for science and technology were estimated to be \$2,094 million in 1980-81, compared to forecast expenditures of \$1,884 million in 1979-80, an increase of \$210 million or 11%. The data on S&T expenditures for three years up to 1980-81 are given in Table 14.1.

Some 47% of the total increase in 1980-81 S&T expenditures is accounted for by three areas. The increase for energy, mines and resources is estimated at \$24 million, with \$13 million for energy. The \$30 million increase for industry, trade and commerce includes a \$26 million increase in industry support programs. The \$42 million increase in the budget of the Natural Sciences and Engineering Research Council was announced late in 1979. These three areas plus the National Research Council account for almost 60% of the recent increase in S&T expenditures.

The government's expenditures on S&T according to performer sector are shown in Tables 14.2 and 14.3. These tables include R&D and related scientific activities (RSA). Extramural expenditures for non-government bodies were expected to show an increase of \$95 million from 1979-80 to 1980-81: \$23 million in industry, \$64 million in universities and \$9 million in the provincial sector. A statistical summary of federal scientific expenditures by application area is given in Table 14.5.

Communications

14.1.2

New technologies such as lasers, fibre optics, micro-computers, large scale integration and videodiscs are the ingredients of what has come to be known as the information revolution. These ingredients make it possible to provide nearly universal access to a myriad of new computer-based information services. The development of Canadian communications is the responsibility of the department of communications (DOC) and the majority of the government's expenditures occur in this department. Other agencies playing a role in communications science are the National Research Council (NRC) and the Canadian Broadcasting Corp. (CBC).

The most striking aspect of the new electronic information systems and services is the speed with which they have developed. Ten years ago they were still dreams for the future. Now combined computer-communications systems are spinning a web of services around the globe.

In the light of these factors, DOC has established the objective of channeling the communications revolution to the benefit of Canadians as its highest priority and works toward these objectives: achieving the most rapid feasible expansion of services and systems without prejudice to other social priorities, ensuring equitable distribution of services to all social and regional groups, ensuring adequate Canadian control and ownership, protecting right of access, protecting privacy, and protecting freedom of speech.

Videotex is a generic name for systems which permit a residential or business subscriber to use a suitably modified television set to access information stored in a central computer data bank, or to cause information to be transmitted to the computer or to another terminal. Information transmission can be via a telephone line, a cable system, optical fibre or radio transmission. The development of a Canadian videotex system called Telidon was first announced in August 1978. Its development arose out of

some generic applied research, which began in 1974 at the department's communications research centre.

To promote the exploitation of Telidon, the department instituted a program of field trial subsidization, assistance toward the development of production prototypes of the necessary range of equipment, and co-ordination, standardization and related activities. An advisory committee was formed, comprising representatives of information suppliers, carriers, cable TV companies and broadcasters, manufacturers, labour and civil groups, to help guide Telidon development.

Product development in the Canadian electronics industry is proceeding at a rapid pace. Bell Canada undertook a \$10 million field trial of Telidon involving over 1,000 terminals with about 100,000 pages of accessible information. As noted in Chapter 16, Communications, other field trials were under way or planned by Alberta Government Telephones, Manitoba Telephone System, the Ontario Educational Communications Authority and Telecable Videotron.

In recent years, automation (in the form of free standing text editing and automatic word processors) has been making rapid inroads into the office environment. New data communications services have led to the creation of computer communications networks which permit widespread access to data processing and information services of all kinds. These two technologies are now being combined to make possible automated offices involving electronic office-to-office communications, information storage and retrieval and sophisticated information management tools. Canada, with a leading position in both the data communications and word-processing industries, has an opportunity to play a major role in office automation.

A joint government-industry program has been initiated to establish Canadian industrial leadership in certain communications-related aspects of the automated office through the development of nationally manufactured equipment to implement Canadian network services. The first phase, a market survey, was completed in November 1979 with a report by Canadian National-Canadian Pacific Telecommunications which indicated a market potential for office communications in the order of \$5 billion to \$20 billion over the next 15 years. The immediate target is to extend word-processing technology to complement and strengthen the existing range of telex services provided to some 40,000 Canadian subscribers.

The efficient exploitation of the radio frequency spectrum is a responsibility of the communications department. To discharge it effectively, research is required on the propagation of radio waves, natural and man-made sources of unwanted radio emissions or interference and development of techniques for more extensive use of the available spectrum. Since 1969 expanding effort has been devoted to increasing the efficiency of spectrum use in the face of growing congestion and exhaustion of available space in the most favourable bands.

DOC is supporting spectrum research projects at Nova Scotia Technical College, Laval University, McGill University, the University of Western Ontario, University of Manitoba and the University of British Columbia. On the industrial side, there are co-operative programs with several telephone carriers for the study of propagation problems associated with the new, high-capacity digital relay systems being installed across Canada. In these projects the department is providing both equipment and expertise to assist in the evaluation of system performance.

A substantial proportion of the research resources is dedicated to work in support of policy and regulatory priorities. An extensive study of electromagnetic propagation in the Great Lakes area was initiated to provide technical data required for policy development and planning for broadcasting services. Considerable research effort has also been made to develop an automated spectrum management system.

Mobile radio systems serving users on land, air and water operate on frequencies assigned by DOC under the Radio Act. The department has a number of activities in progress, ranging from planning for a satellite to serve air and marine and some land mobile users to development of mobile digital radio systems.

It is often said that Canada has one of the best telecommunications systems in the world. But this is true only in the major cities. Many rural areas have relatively limited

services and the department started a rural program in 1976 to find ways to improve them. By early 1980 it had spent some \$2 million on efforts to stimulate design of products suited to rural telecommunication, provide an engineering and economic framework for development of federal policies and to promote federal-provincial co-operation in improving rural services. The rural program is evaluating such current technologies as satellite systems and fibre optics to encourage development of better rural communications and is working with a number of universities for technical studies and provincial government agencies for field trials.

Domestic security

14.1.3

In the human sciences field, the justice department carries out many activities related to protecting the life and property of Canadians and improving the effectiveness and fairness of the criminal justice system. These activities include preparation of background studies, analytical studies and evaluations of the whole judicial spectrum. The aim is to provide persons required to make decisions about the country's laws with a sound base of information, to point out areas in need of reform and to identify anomalies or inconsistencies in the system.

Related studies are carried out by the department of the solicitor general under a program to develop and publish information about prevention of crime and victim assistance, criminal justice policy and research on policing and corrections policy. Recent projects included a Vancouver study on the frequency and distribution of certain crimes and the impact on victims, and evaluation of a policing program applied by the tribal council on six Dakota-Ojibway reserves in Manitoba. A new publication program was started in 1977 and reports have been issued. The department has a program of matching contributions to selected research projects at university criminology centres.

Although most of its research is performed by the solicitor general's department, the Royal Canadian Mounted Police carries out some internally. Their program has included research into white collar and computer crime, gun control, child abuse and domestic violence, crime prevention techniques and police-community relations.

At the request of the Canadian Association of Chiefs of Police, the RCMP and NRC embarked on research into the development and improvement of police equipment. Major projects included were face shields for riot helmets, improvement in both tear gas and methods for its dispersal, use of lasers in fingerprint detection and bomb suits for handling explosives.

Energy

14.1.4

An interdepartmental panel on energy R&D has monitored and co-ordinated most of the government's energy R&D activities since 1976-77. Related S&T supported by the government, outside the responsibility of the panel, involves such aspects as environmental impact, resource assessments, socio-economic studies and major demonstration projects.

S&T activities directed by the government are concerned with conservation, fossil fuels, nuclear energy, renewable energy resources, and transportation and transmission of energy.

Energy conservation in the transportation sector is the largest program in conservation, particularly in plans for developing energy efficient automobiles, small aircraft and power plants. Conservation studies identified opportunities for potential energy savings, principally in heating and air-conditioning buildings; plans were under way for a high priority research, development and demonstration program to take into account both the retrofit and new construction markets.

Both cost and availability of energy are major elements in the government food strategy, described in Chapter 11. Resources in the federal agriculture department support energy R&D in food processing and in livestock structures, crop drying and greenhouse operations. For conservation and energy recovery, the environment department has been conducting a program in industrial and municipal wastes management. Projects were started for recovery of used oil and ferrous and non-ferrous scrap, re-use of waste paper and processing of used tires into rubber-asphalt compounds.

Fossil fuels. The Canada Centre for Mineral and Energy Technology (CANMET) in the energy, mines and resources department speeded up development of a hydrocracking process for heavy oils as found in the oilsands in Alberta. A coal combustion program demonstrated the benefits of substituting coal for oil in heat and electricity generation, particularly in industries and utilities in the Atlantic provinces.

Nuclear energy. R&D by Atomic Energy of Canada Ltd. to provide technological support to the CANDU nuclear system accounted for more than 93% of expenditures in this area. Other programs focused on fusion research, the uranium fuel resource base and regulatory activities.

Renewable energy resources. Section 13.1.3 in Chapter 13, Energy, summarizes government activity in developing renewable energy research. NRC had major responsibility for the S&T to support programs for the purchase and use of solar heating in response to initiatives from the private sector, and for assistance to solar energy manufacturers. Results suggested that passive solar technology can be cost effective and that solar hot water is more economic than solar space heating. Cost effectiveness of active solar systems seemed to be several years away and would require a major cost decrease in conversion systems. For wind-generated energy the main technological focus was on the verticle-axis wind turbine, chiefly at the 50 kW level. Research was under way on developing technology for obtaining energy from forest biomass and from other biomass energy sources such as farm, animal and food processing wastes. Test drilling to determine possible geothermal sources of energy is described in Chapter 13.

Energy has been the area slated for the largest amount of federal spending on scientific activities in recent years. Food was second and health third. Table 14.5 gives an overview for three years of actual, forecast and estimated expenditures.

Transportation and transmission. Two programs are involved, the transportation of oil, gas and coal and the transmission of electricity. In northern transportation of oil and gas, the government's work in Arctic vessel technology has been primarily in support of regulations. Large powerful ships capable of year-round operation in ice-covered waters are required. In transmission of electricity the program consisted of electrical research at NRC and government support for S&T projects in industry and the utilities, co-ordinated by the Canadian Electrical Association.

14.1.5 Environmental issues

Various components of environmental sciences include the atmosphere, water, land and wildlife. Research on environmental issues helps develop policies, regulations and guidelines to ensure the continued availability and productivity of Canada's renewable resources. It also helps to develop an information base required to formulate environmentally-sound industrial development plans.

Air. In 1980-81 the government's expenditure on air-related research was expected to be \$3.7 million. The environment department monitors and collects air data on common contaminants through an extensive surveillance network. Air monitoring surveys provide information on specific problem areas. Proposals are assessed for the development and demonstration of new air pollution control technology.

Air pollution research is concerned with improving process and control technologies for industries that emit air pollutants. Federal departments of health and welfare and environment were studying the potentially harmful effects of acid rain on human health.

Water. Government expenditures on water-related environmental issues and resource management were expected to be \$38.4 million, with \$33.4 million allotted to the environment department. Studies were to include potential water shortages on the

Prairies, energy development, new industrial activity and continuing agricultural activity. Research was focused on new systems for demand management and use of weather modification techniques to increase rain.

Studies in water quality include ground water contamination, acid rain on Canadian lakes, lake renovation methods, water quality and pollutants. Among priorities were the development of small scale sewage treatment systems, the automation of larger treatment systems, new methods of waste recycling, waste water treatment systems for cold climates, and development of oil spill control technologies for the Arctic and other offshore areas of Canada. The health and welfare department has re-evaluated guidelines for drinking water quality. Analytical surveys were carried out on the physical and chemical contaminants of drinking water to evaluate their toxicological significance.

Land. Land-related expenditures on environmental issues were estimated at \$6.2 million including a study of the environmental impact of mining and energy development at \$2.6 million. The environment department was to continue research on ecological land classification, applications of remote sensing and an analysis of Canada land inventory data on land use. Rapid conversion of agricultural land to industrial use and social and economic problems associated with the loss of agricultural land were also being studied.

Other. The environment department allotted \$11 million on other environmental issues, including wildlife. A 10-year banding program on lesser snow geese in the eastern Arctic and the possible effects of various kinds of development on wildlife and wildlife habitat were continued.

NRC planned to spend \$4.2 million on various environmental issues, mainly on biological research on waste and pest management. It also co-ordinated scientific activities through an associate committee on scientific criteria for environmental quality.

Food

14.1.6

Food science is concerned with primary production, processing, distribution and retailing of food. It includes nutrition, safety and quality and embraces the agriculture and fishery sectors.

Grain. Canada produces about 3% of the total world grain or about 11% of the grain that enters world markets. Cereal crops have a farm value estimated at over \$5 billion. Several new varieties of wheat, barley and corn have been licensed and distributed. The varieties of grain crops have undergone steady improvements as a result of research in the federal agriculture department.

Pest control. Reduction of losses by insects attacking agricultural crops has largely depended on the application of chemical insecticides. Agriculture Canada research is directed toward developing pest management systems that make more use of biological control methods and cultural practices.

The Canadian food strategy is to increase production and market research. A processing, distribution and retailing contract program aims at development of new or improved food products, energy conservation, better maintenance of food quality, improved food safety and more efficient processing, storage and distribution.

Fish stocks and habitats. In the fisheries and oceans department activities related to the East Coast fishing industry are funded under an Atlantic fisheries development program; 1980-81 expenditures were estimated at \$16.9 million. Research emphasis was on factors affecting the size and distribution of fish stocks. On the West Coast the department investigated ways of strengthening the stocks of Pacific salmon. Under a salmon enhancement program, hatcheries were constructed and other measures taken with an aim to boost production by more than 2 million fish.

The department continued to protect fish habitats that support Canadian commercial and recreational fisheries. Ecological work continued on stream rehabilitation, pollutants in the atmosphere and acidification of freshwater lakes. Other research was conducted in aquaculture technology, fish health and fish genetics. In the western region, 3,500 farmers have fish farms as a sideline.

Food safety and nutrition. The federal health and welfare department has responsibility for public health and for safety and nutritive quality of food under the Food and Drugs Act. Activities include studies on the harmful effects of agricultural chemicals and food additives, and uniform national standards for safe temperatures to be used in the holding, transport, storage and sale of certain perishable foods.

The department develops regulations on the addition of nutrients to improve the nutritional quality of food. It implements the recommendations of a committee on diet and cardiovascular disease through activities with professionals and the public. Consumer education, information and advisory services are provided to reduce the incidence of nutrition-related diseases such as cardiovascular disease, dental caries and obesity. Nutrition education for children receives particular attention.

NRC conducts food and agricultural research for the prairie region at its Saskatoon laboratory and research on food processing and environmental quality in laboratories in Ottawa and Halifax.

14.1.7 Health

Various federal departments and agencies share in the goal of improving the general health of Canadians by their support of studies on basic human biology and behaviour. The following are some of the leading research activities.

The health and welfare department is the major supporter of health improvement programs. It acts as a health advisor to the environment department for the Clean Air Act. These two departments jointly implement the Environmental Contaminants Act. Research is carried out on the physical and chemical contamination of air, drinking water, and indoor and outdoor environments, and the toxicological effects are evaluated. Research is supported to provide information on the effects of smoking, alcohol and drug abuse and improper eating. On an international scale the department provides studies and advice to the World Health Organization and NATO.

The Medical Research Council supports research that advances knowledge of the functions of the human body through biochemistry, genetics, pathology, pharmacology and physiology.

The Social Sciences and Humanities Research Council deals in health-relevant fields (education, psychology and sociology) including how humans learn, what induces anti-social behaviour and what economic and social forces influence the use of home care or mental health services.

Several departments identify health hazards in natural and man-made environments. The departments of labour and health and welfare and the Canadian Labour Congress support a centre for occupational health and safety. Its research programs include health hazards in the workplace and factors that affect the mental health of workers. Health and welfare and the transport department co-fund a civil aviation medical unit that studies human factors in air accidents.

NRC is a major contributor in the area of health sciences; work was under way on the development of medical devices and prostheses, vaccines and computerized programs for medical education. A rehabilitation technology unit develops aids for the disabled.

Atomic Energy of Canada Ltd. conducts health-related scientific activities primarily to reduce exposure to radioactive emission, but also related to the production of radioactive isotopes used in the diagnosis and treatment of disease and in basic research on disease processes.

14.1.8 Natural resources

Evaluation, development and management of forestry and mineral resources from a national perspective are the main concerns of S&T activities on natural resources.

Forestry resources. Chapter 10, Renewable resources, gives a detailed account of forestry and forest resources and their role in Canada's growth. Almost all government expenditures in forestry science and technology are by the Canadian forestry service of the environment department. A description of this federal agency is given in section 10.1.3, Forest administration. Expenditures for 1980-81 were expected to be about \$32

million devoted to the forests themselves for research on improving forest growth and minimizing losses by fire, pests and diseases. With the privatization of the forest products laboratories in 1979 virtually all R&D on forest products, including wood products, pulp and paper, is now being carried out by the industrial sector, including research institutes.

Mineral resources. All the government's reported science expenditures for mineral resources come under the aegis of the energy, mines and resources department. The earth science services program collects geoscience information about the Canadian land mass and continental shelf.

The Canada Centre for Mineral and Energy Technology (CANMET) carries out most of the R&D in mineral technology. It performs, contracts and co-ordinates research on mining, extraction and utilization of minerals and metals. A mineral research program is concerned with non-energy minerals and metals and carries out research on mining technology, including health and safety and on processes to improve metallurgical operations and develop marginal resources.

A continuing program focuses on expanded usage of mineral-based materials, improved product quality and more diversified use of metals and alloys.

Oceans

14.1.9

Canada has a longer coastline than any other country, much of it arctic or sub-arctic, and a continental shelf larger than the area of most countries. These facts and the extension of fishing zones to 200 nautical miles accentuate the importance of ocean-related research. The objectives of Canada's ocean policy are: to develop participation of Canadian industry in exploitation of offshore resources; to emphasize marine science and technology in resource management, ocean engineering and forecasting weather, ocean currents and ice movement; to excel in operating on and below ice-covered waters and to maintain an information base on renewable and non-renewable offshore resources.

A panel on ocean management was established in 1976 with responsibility for renewable and non-renewable resources, protection of the marine environment, development and control of navigation, defence, and international concerns.

Establishment of the fisheries and oceans department in April 1979 reflected renewed emphasis on ocean-based resources. Major expenditures in oceans science and technology go toward preserving and enhancing the quality of fresh and marine waters and the effective use of ocean resources.

Canada also participates in international programs. It supports the intergovernmental oceanographic commission affiliated with the United Nations; a weather monitoring project organized by a world meteorological organization; and as part of the integrated global ocean system transmits and receives data on sea surface, temperature, salinity and ocean currents through a world ocean data centre in Washington.

The national defence department performs ocean S&T largely in support of needs of its maritime command. Research ranges from ship propulsion, efficient hull design, and underwater acoustics to studies of human performance in the ocean depths.

A major new initiative for NRC in oceans S&T is the establishment of an Arctic vessel and marine research institute on the grounds of Memorial University, St. John's, Nfld., scheduled for completion in 1983.

An oceans-related technology development which has taken place in the last few years is a Canadian ocean data system (CODS) project. A Nova Scotia company, with scientific and technical assistance from NRC and funding from that council and the environment department, was able to develop an ocean data buoy system which is internationally recognized and has penetrated the world market. The system is being developed further toward the possibility of replacing the weatherships used for many years to collect meteorological and oceanographic data in the North Pacific Ocean.

Another Canadian high technology project with government and industry co-operation is known as SEABED. It is designed to develop new methodology for geological mapping of the seabed and 200 metres of the underlying strata.

For the past 20 years, NRC physicists have collaborated with the Bedford Institute of Oceanography in Dartmouth, NS, other government institutions and Canadian high-technology companies to develop a wide range of oceanographic instruments. One result was a Canadian system for rapid ocean-related data gathering which carries equipment to gather facts about temperature, the salt content of sea water and the concentration of plankton. Called the BATFISH, the system is towed at a set rate, diving and rising from the surface to a depth of 300 metres to make continuous measurements.

Extensive offshore exploration has taken place for oil and gas development. An offshore Labrador biological studies program has been started to complement environmental studies already undertaken by industry and government.

14.1.10 Scientific and technical information

Supplying scientific and technical information (STI) to users in Canada is made difficult by such factors as a small population distributed over large distances, a pluralistic society with two official languages, multiple levels of government and the need for an industrialized country to maintain coverage of virtually all fields of S&T although producing only a small percentage of the world's output.

The Canada Institute for Scientific and Technical Information (CISTI) holds the largest collection of STI in Canada, drawing on the world's S&T literature through science libraries and related systems and services. CISTI is part of the National Research Council which operates the federal government's largest multidisciplinary R&D laboratories. The institute's strengths in the natural sciences and engineering are complemented by other federal collections such as those of the National Library of Canada in the social sciences and humanities and of the Geological Survey of Canada.

Agriculture Canada has a network of over 20 branch libraries across the country, with a headquarters library in Ottawa as the hub. There is also a co-operating network of university libraries. Many scientific and special libraries have grown up in response to institutional needs and there is a great deal of co-operation and interdependence in interlibrary loans. Other S&T information is based on specialized data collections, such as a national index to sources of geoscience data of the energy, mines and resources department and a water resources document centre operated by the environment department. Increasing use is being made of various computerized information systems that are available commercially. Over 9 million citations from 15 data bases can be accessed in either French or English, through some 525 communications terminals across the country.

NRC also provides a technical information service (TIS) oriented to the needs of small and medium-sized manufacturing businesses with few or no technical staff or resources of their own. It receives from 20,000 to 25,000 inquiries annually and provides in-depth assistance for 500 to 700 firms. TIS operates through a network of field offices across Canada, and has been expanded to help small manufacturing firms undertake longer term productivity improvement projects. Budget increases have enabled TIS to give financial support to senior students in science and engineering so that they can provide industrial assistance under supervision of university professors.

14.1.11 Social development

Science activities in the social development field provide information for federal policy decisions over a wide range of areas: education, labour, manpower training and employment, population control, housing, consumer safety and health standards, community development and social welfare. Some of the goals of the policy initiatives are: improving welfare services, providing training for a more capable and flexible work force, increasing employment and improving the standard of living, measuring the implication of new technologies, and studying the growth of urban communities and its impact on transportation and housing.

Research in economics, sociology, education, demography, anthropology and other social disciplines has contributed toward the analysis of issues facing Canadian society. For example, problems linked to unemployment among youth and skilled manpower have been extensively studied. Labour Canada has conducted research related to sick leave and handicapped workers and a survey of hours of work and time-budgets in

Canada, and has prepared papers dealing with problems of elderly workers for the International Labour Organization (ILO) and the Organization for Economic Co-operation and Development (OECD). The department has been developing policies and programs directed toward improving labour-management relations and the quality of working life.

A major vehicle for S&T in social development in the health and welfare department is the national welfare grants program. Its objective is to promote improvement in welfare services and self-help activities. Research activities are directed toward the aged, single parent families, family life, unmarried mothers and the handicapped. Support is also given to on-going research on social policies, child welfare, family violence and breakdown, industrial social work, social gerontology and welfare manpower.

NRC is engaged in a variety of research projects of social significance, particularly public safety, consumer protection and rehabilitation technology. The council supports a continuing program on improved aircraft safety and technical aspects of air accident investigation.

Activities in the citizenship program of the secretary of state department range from research into second-language learning disabilities to development of automatic translation systems and surveys on a variety of cultural topics.

Rapid growth of electronic communications and Canada's participation in space activities have resulted in new technologies and new opportunities for industry. The need has been recognized for more research capacity in both industry and the universities.

Space

14.1.12

Two distinct kinds of scientific activity in this area are space technology and space research. Space technology has provided the development of satellite systems for various applications.

Canada had been involved with satellite development for two decades. Its first four satellites were part of an ionospheric research program which showed the effects of the upper atmosphere on long-distance communications. Increasing use of geostationary satellites to provide more reliable telecommunications systems resulted in development of sophisticated communications satellites. However, Canada has not restricted its satellite use to telecommunications but now has a highly diversified satellite system. Satellite technology is particularly suited to the solution of some distinct problems resulting from the severe Canadian climate, vast land and coastal area and scattered population.

One objective of the space policy is to develop and maintain a competitive space industry in Canada. There has been a deliberate effort to move the performance of government requirements for space science into industry. In 1979 the federal government reaffirmed its policy that it would be a priority of the national space program for Canadian industry to compete as a prime contractor for communications satellites. Since the inception of its space program, Canada has pursued a policy of international co-operation, developing the satellite technology itself but procuring its launch vehicle requirements through the US National Aeronautics and Space Administration (NASA). International agreements with the United States and in some cases with other countries have been successful in reducing costs, in forging international scientific and technology links that provide Canada with technology not otherwise available, and creating opportunities and economic benefits for Canadian industry.

During the past decade a growing number of agencies have been using satellite systems to provide operational services. The federal departments of national defence and transport have studied satellite systems for search-and-rescue notification. The

communications department (DOC) has been sponsoring field trials for direct-to-home broadcasting and the delivery of information and education services to remote areas. DOC also carried out studies to provide mobile radio and television and radio broadcasting services. A Canada centre for remote sensing in the energy mines and resources department is receiving and processing data from satellite systems giving information about the earth's surface, for application in agriculture, forestry, water resources, ice reconnaissance and oil and mineral exploration. The federal environment department operates a network for reception and distribution of data used in preparing forecasts of weather and ice conditions. Another non-communications application was an interdepartmental project established in 1977 to determine the feasibility of using satellites to help meet surveillance needs for Canada's extended coastal zones of 200 nautical miles. The project included participation in a complementary US satellite program and consultation with potential international partners.

In the foreign sphere, an agreement of co-operation between Canada and the European Space Agency (ESA) came into force in January 1979. Contracts in general studies and basic technology have been awarded to Canadian industry. DOC has an industrial contract fund to support Canadian industry in producing satellite sub-systems and components; value of contracts is divided equally between work for satellites and work related to earth terminals.

The other broad category of the government's space activities, space research, is conducted by NRC. A six-year co-operative space science program with NASA was approved. Objectives were: to sustain and improve Canadian research competence in the space sciences, to provide new knowledge needed by Canada for decisions on the future use of space, and to train young scientists and engineers in a variety of space disciplines and share with NASA the generation of new knowledge.

14.1.13 Transportation

As explained in Chapter 15, Transport Canada is responsible for the efficiency and safety of the extensive and diverse transportation system in Canada. Major considerations are the current state of existing systems and the major capital expenses required for new systems. Data gathering is among related scientific activities necessary to assess accurately the existing transportation capabilities and to predict future requirements. Transportation-related science and technology is conducted by a number of federal departments, co-ordinated by an interdepartmental panel of transport research and development.

The energy, mines and resources department is involved in construction requirements and routing of land transport systems, development of materials and alloys for vehicles, rails and wheels for improved wear and materials for arctic application. The fisheries and oceans department charts inland and ocean waters. The environment department carries out related scientific activities in meteorology, seastate and ice forecasting.

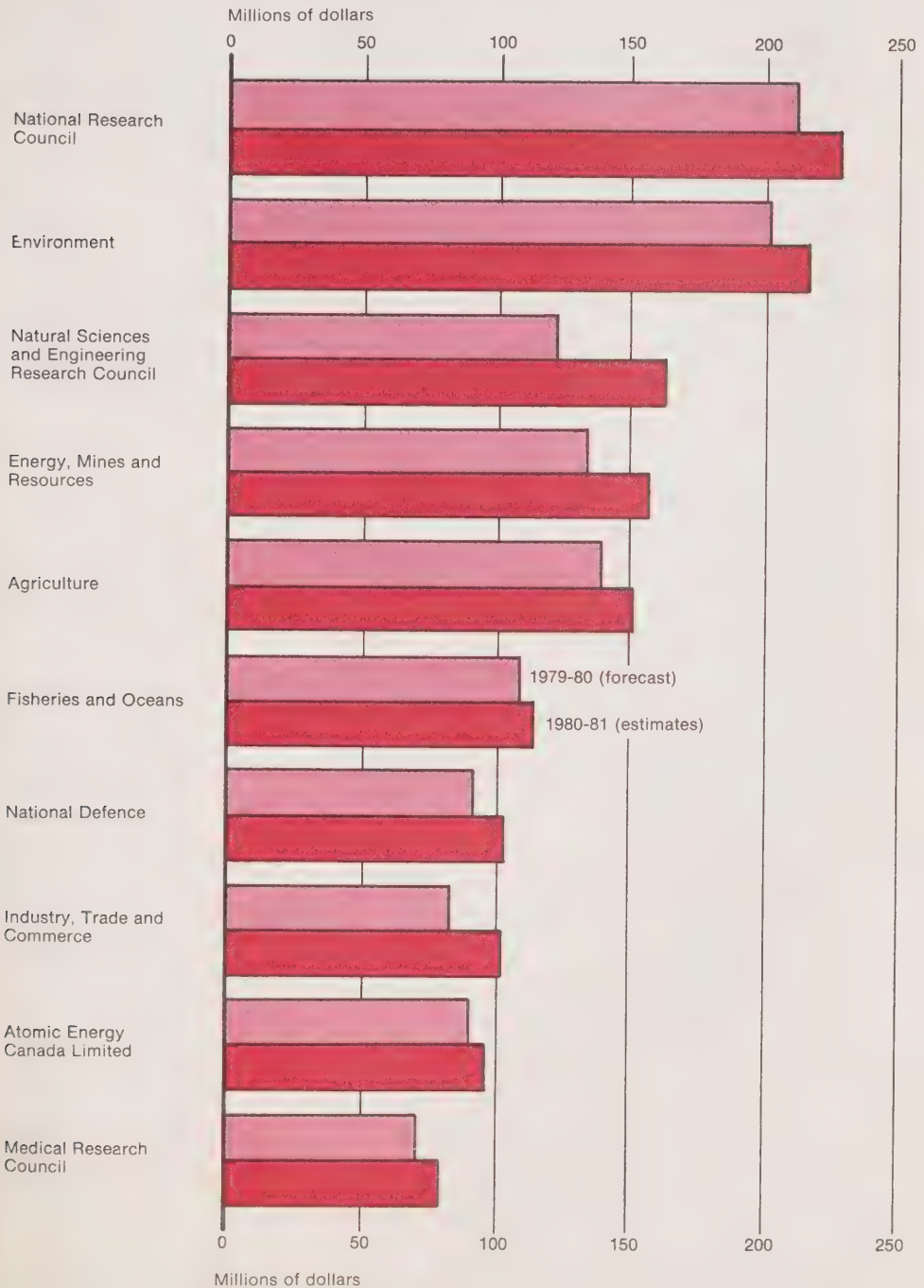
NRC is a major contributor to R&D in transportation engineering. Studies have included use of rail cars at higher speeds with increased loads and use of air cushion vehicles for off-road surface transportation. The latter led to development of an air cushion platform attached to the bows of vessels to improve ice-breaking capabilities. Alternative types of fuel and propulsion are being studied. On-going research into arctic shipping is related to development of energy resources in the Arctic islands.

Two projects being conducted in industry, cost-shared by the industry trade and commerce department are: development of a new diesel locomotive to replace those developed 25 years ago and new methods of maintaining high quality track to enhance handling capability and safety of rail systems.

The defence department co-operates with Transport Canada by providing facilities and technical support in road research and studies related to vehicles, search and rescue, ship reliability and marine propulsion.

Urban transportation is primarily the responsibility of provincial and local governments. However, the federal government is involved through its concern for industry, specifically the urban transportation equipment manufacturing industry, not only to supply the domestic need but for export.

Major federal government expenditures on natural sciences by department or agency, 1979-80 and 1980-81



14.2 Extramural activities

This category includes S&T activities funded by the federal government but carried out in the business sector, universities, other levels of government or other countries.

Since 1978 the federal government has strengthened R&D capacity, primarily in the extramural sector and particularly in industry. There has also been substantial strengthening of the university research system through budget increases of three granting councils: the Natural Sciences and Engineering Research Council, the Medical Research Council and Social Sciences and Humanities Research Council.

Other measures included expansion of the NRC program of industry/laboratory projects (PILP), in which government laboratory projects are contracted out to industry for further stages of development, and establishment of a similar program, co-operative projects with industry (COPI) shared by the departments of agriculture, communications, environment, fisheries and oceans, and energy, mines and resources. There was increased interfacing among government, industry and universities.

Universities are at the core of the Canadian science effort. The need for new knowledge cannot be fully met without investment in university research. This is also the principal means of training research manpower in Canada. Objectives for government support of university research are: to assist fundamental research arising solely from an investigator's personal interest in order to advance knowledge, and to institute concerted research programs that contribute to the attainment of identified scientific goals. Concerted research is more likely to be interdisciplinary than is fundamental research.

14.2.1 Industry

The industry, trade and commerce department (ITC) is the largest funder of S&T activities in industry. Under the enterprise development program, Canadian companies may receive cost-shared support to develop new or improved products and processes or conduct market research. Recent increases in this program and increased funding for the electronics industry more than offset reductions for S&T spending for a defence industry program to assist several sectors including aeronautics, electronics and shipbuilding. An industrial energy R&D program encourages Canadian industry to undertake R&D that will reduce energy consumption.

Other ITC programs have assisted in the establishment of non-profit organizations to provide R&D and other technical services. Nine industrial research institutes have been set up at universities; these arrange for university faculty to provide contract research and technical services to industry. Twelve centres for advanced technology have been established to help universities and provincial research organizations develop and maintain competence in specific fields of technology. Four industrial research associations were set up to help groups of firms undertake co-operative research on common technical problems. ITC supports such organizations for a maximum of seven years. They are then expected to become self-supporting.

NRC is the second largest funder of industrial S&T activities. More than 98% of the council's industrial funding is for R&D, divided almost equally between contracts (\$19.5 million in 1980-81) and grants and contributions (\$21.7 million). The PILP projects mentioned in Section 14.2 above are under the contracts program; examples are extraction of oil from tar sands, vertical axis wind turbines for electric power generation, a snow-and-ice-free railroad switch and reduction of hydrogen level in steels. Related COPI projects have included a modified skim milk drying process and an integrated radiotelephone system.

The principal source of funds for industrial research is the NRC industrial research assistance program with estimated expenditures of \$19.7 million in 1980-81. This program assists Canadian industry to pay salaries and wages of R&D staff working in Canadian companies on approved projects with significant technical content.

14.2.2 Universities

The federal government provides direct support to universities for S&T, first in grants and contributions and second through contracts in support of departmental missions.

Indirect support is provided through established program transfer payments. Of the total direct payments, 89% is for university R&D mostly in grants from the Medical Research Council, the Natural Sciences and Engineering Research Council and the Social Sciences and Humanities Research Council. The rest is for related science activities, mostly for education support which covers grants for the post-secondary education of students in the natural or engineering sciences.

Value of government R&D contracts and research fellowships to individuals has increased in recent years, as have payments and awards by the Natural Sciences and Engineering Council, which planned to spend \$152.6 million in payments to individuals and institutions in the university sector in 1980-81.

In Canada the major part of research in the health sciences is conducted in universities and affiliated hospitals and institutions. The Medical Research Council provides about 50% of the Canadian support to health research. Voluntary agencies financed by the public provide a significant proportion of support. Nearly 83% of the council's support of research and training is relevant to specific diseases. The grants program funds have been awarded in order of priority to research related to cancer, cardiovascular disease, respiratory disease and diabetes and related disorders. Substantial grants for heart research have been made to Dalhousie University and the University of Manitoba.

Complementing the Medical Research Council's support of university science is a national health R&D program of the federal health and welfare department. It has helped to expand university research in the health care field.

The Social Sciences and Humanities Research Council spends nearly half its budget on fellowships and scholarships to support Canadian students and career scholars. Through a research grants program the council supports advanced research in a broad range of fields including social history, psychology of child behaviour, linguistic and cultural development, folklore collection, archeological excavation and biographical, economic, management and political studies.

Large-scale research and editorial projects undertaken by groups of scholars over a period of years are eligible for support. Another grants program supports research in areas of national concern such as population aging and the strengthening of university research resources.

NRC planned to provide \$13.5 million as a continuing contribution in 1980-81 for a medium energy proton accelerator and meson facility at the University of British Columbia.

Among the departments which channel federal support to universities for research are agriculture, energy, mines and resources, environment, national defence, transport and communications.

International

14.2.3

Except for projects of the International Development Research Centre and the Canadian International Development Agency, foreign performers are engaged when a particular expertise is not available in Canada or when specific research facilities are only available abroad.

DOC's foreign expenditures result from a co-operative agreement between Canada and the European Space Agency (ESA). The department was to participate in the development and preparation of a large-platform communications satellite, and the energy, mines and resources department was to share in the development of a remote-sensing satellite. The national defence department planned contracts with government agencies in the United States and Britain and with companies abroad having special capabilities in such fields as electronics, avionics and communications.

The three granting agencies mentioned in the universities section provide funds for fellowships, research grants, post-doctoral education support for Canadian scholars working outside Canada and an international exchange program which brings foreign professors to Canada and sends Canadian scientists abroad.

NRC's main foreign expenditures are for a Canada-France-Hawaii telescope, a large optical telescope being built on an extinct volcano in Hawaii. NRC contributes to an international energy authority and pays for affiliation in such organizations as an

international council of scientific unions, an international union of pure and applied chemistry and an international bureau of weights and measures.

14.2.4 Provincial

Federal-provincial interaction in science and technology arises in three ways: direct federal payments to provinces, joint federal-provincial programs, and federal government S&T activities in which the provinces have an interest. Numerous federal-provincial co-ordinating committees are concerned with special science activities, such as a Canadian agricultural research council and a co-ordinating council of resource and environment ministers.

Early in 1979 the ministry of state for science and technology initiated bilateral consultations with each of the provinces to define goals and set priorities for industrial R&D which could be helped by federal-provincial co-operation.

The energy, mines and resources department is the largest spender, with about \$43.4 million earmarked for joint programs with the provinces for 1980-81. In Alberta a large part of the fund is used for energy R&D such as coal mining research, and in Saskatchewan for the development of heavy oil recovery technology.

Among its larger programs, the environment department planned to spend \$1.2 million in 1980-81 for science studies under a Great Lakes water quality agreement with Ontario. Another \$1.2 million was to be matched by contributing provinces for studies on recovery from flood damage.

National Museums of Canada planned to pay \$4.8 million to regional and provincial museums for scientific activity. Agriculture Canada was giving a large single-year contribution for construction of a provincial agricultural research facility at St. John's, Nfld. The national health and welfare department was contributing to a guaranteed income demonstration in Manitoba. The regional economic expansion department, concentrating on the Atlantic provinces and Quebec, conducted research on manpower resources in selected areas and development in industry.

14.3 Provincial agencies

14.3.1 Economic planning

Nova Scotia set up Voluntary Planning, an organization representing non-government elements of the community, in 1963 to involve the private sector in economic and social development.

The program draws on a broad cross-section of the private sector and maintains a basic structure comprised of grass roots elements of producers, private business, labour and government in sector committees in agriculture, construction, fisheries, forestry, mining, tourism, transportation and secondary manufacturing, and in advisory councils in consumer affairs, education, energy and labour-management affairs. These groups come together on a provincial planning board.

The board facilitates identification of problems by the private sector and relates appropriate private and public resources in an attempt to resolve these problems. The voluntary planning program, in an advisory capacity, helps the private sector to participate in development planning.

This agency gives government a single point of contact with major elements of the private sector and provides the private sector a broad forum for discussing problems, with a direct channel to government for submitting co-ordinated views on development planning.

Recent activities include the completion of a study on energy, *Energy outlook 1990*, a major ongoing review of provincial taxation, a review of the Municipal Planning Act, and a co-operative venture with the provincial government in forming a provincial development strategy.

The Quebec Planning and Development Board has existed in its present form since 1969. It replaced the Quebec Planning Board, established in 1968, and the Economic Orientation Council (1961-68).

The terms of reference are specified in the legislation that established the board which is authorized to prepare, on behalf of the government, detailed plans, programs and projects for management of the land and development of particular regional potential, to make better use of social and economic resources. The board advises the government on policies and programs developed by the departments, to foster harmonization. It co-ordinates research, studies and inventories undertaken by government departments and agencies and provides liaison between those organizations when the implementation of a project concerns several of them. The board has the status of a corporation whose president is the director general.

The Ontario Economic Council, set up in 1962 as a public policy institute, undertakes research and policy studies to encourage optimum development of Ontario's human and material resources. Studies concentrate on a wide range of economic problems in education, health, manpower, social security and urban affairs as well as government regulation, intergovernmental relations and macro-economic policy. Areas of study are established as a result of liaison with the public and private sectors.

The council sponsors research projects and publishes studies. It organizes conferences and regional seminars on Ontario's economic issues. The annual report details research publications and work in progress.

Provincial research councils

14.3.2

Eight provinces have established research councils or foundations, with responsibility for assisting firms with technical problems and aiding development of provincial natural resources. Their expenditures by scientific area for 1978 are summarized in Table 14.4.

Nova Scotia has a Crown corporation with control vested in a board of directors appointed by the province. Its objective is to assist in the economic development of Nova Scotia by promoting, stimulating and encouraging effective utilization of science and technology by industry and government and to undertake, singly or in conjunction with others, such research, development, surveys, investigations and operations as may be appropriate.

The corporation's laboratories in Dartmouth were built on a site donated by the province. The staff of 91 includes 39 engineers and scientists and 37 technicians. The corporation's six scientific and technical divisions provide a strong multidisciplinary capability.

A geophysics division carries out gravity, seismic, magnetic and other surveys on land and at sea. A chemistry division stresses R&D related to minerals and other natural resources. Services are available to industry and government in inorganic and food chemistry, pollution control and chemical engineering.

An operational research division provides a service using mathematical techniques of systems analysis. Divisions on engineering physics and ocean technology emphasize ocean-oriented electronic and mechanical engineering. Another division provides technical information on materials, equipment and processes, and engineering assistance to manufacturing industries. The biology group researches distribution, growth, conservation and utilization of commercial seaweed. It also does microbiological research related to water pollution and treatment of industrial waste waters.

New Brunswick set up a council on research and productivity in 1962. It is governed by an independent group of citizens from management, labour and the professions, appointed for three-year terms. Capital investment was provided by the federal government. Most council operations are carried out on a cost-recovery basis under contract with industry, trade associations and national and international agencies. The council maintains a centre for engineering and problem-solving, industrial research and development.

A **Quebec** industrial research centre was created in 1969. Its primary mission is to contribute to economic development of Quebec through encouragement of innovation in manufacturing enterprises, in particular those of small and medium size. It collaborates closely with such industries in research and development covering various fields of applied science and directed toward creation of new processes and products. In

addition to laboratory activities, it provides an industrial and technological information service available to all Quebec enterprises.

Ontario's research foundation was established in 1928 as an independent corporation. Its board of governors is drawn from industrial, commercial and scientific communities. The organization was financed initially by an endowment fund provided by industrial and commercial corporations through the Canadian Manufacturers Association and a matching grant from the provincial government. Most income (73%) is derived from contract research undertaken mainly for industry. Since 1967 the Ontario government has provided an annual grant, with the amount related directly to foundation income from Canadian industry. The foundation is concerned primarily with development of industry through the application of science and technology. Also, under contract with various levels of government, it undertakes work relative to federal and provincial needs. Foundation activities are not restricted to Ontario; work is undertaken for any organization in Canada on an equal basis.

The foundation, with a staff of about 320, has provided large and small companies with a variety of services ranging from short-term investigations, through product and process development to long-range scientific investigations. Most prime areas of industrial technology are covered. All projects are conducted confidentially, including business, technical or proprietary information revealed by clients or prospective clients. Patents resulting from contract research and development studies are assigned to the client.

Manitoba's research council consists of seven members and two advisory committees whose members represent primary industry, manufacturing, labour, the universities and government. Its main purpose is to assist Manitoba industry to improve its market position by developing a more technologically based production and product capability. The council maintains an office in Winnipeg and has established a food technology centre at Portage la Prairie. Permanent staff members are provided by the provincial government or hired by the council. The work is financed by provincial government appropriations and by contracts with the provincial and federal governments, and fees and service charges may be levied. The council promotes or carries out research, development and technology transfer related primarily to secondary manufacturing. Most activities of the council are aimed at establishing Manitoba as a centre of excellence in food products, electronics, materials research and health care products.

Through a technical assistance centre, industries are encouraged to use new technological developments. The centre is staffed by engineers and scientists with extensive industrial experience. During 1978-79 the centre received more than 500 inquiries for assistance including technical data on material selection and properties.

In Saskatchewan, the research council was set up in 1947 under an act of the legislature. It carries out research in natural and management sciences with the aim of improving the provincial economy. At first the council carried out its research programs at the University of Saskatchewan by means of grants to staff members and scholarships to graduate students. The act was amended in 1954 to empower the council to acquire property, employ staff and conduct its own financial affairs. Laboratory buildings were built on the university campus in 1958 and extended in 1963. The present program places emphasis on consulting and technical assistance to industry and provincial government departments, and research in metallic and industrial minerals, water, the environment, slurry pipeline transportation and selected aspects of agriculture. A large part of the program is carried out by a full-time staff of about 160 but some council research is still promoted by grants to university staff. Members of the council are representatives of the Saskatchewan government, the universities and industry.

The Alberta government set up a research council in co-operation with the University of Alberta in 1921 to promote mineral development. Natural resources studies still receive considerable attention but strong emphasis is placed on research related to establishing new industries in the province, to transportation and to environmental problems. The principal areas of activity are fossil fuels development and utilization,

mineral resource evaluation and research, groundwater and soils investigation, chemical product and process development, technical and economic evaluations, microbiology, technical assistance to industry, gasoline and oil testing, pipeline transportation, highway research, river engineering, environmental studies and hail research.

The council is directed by a 15-member board, representing the government, the universities and industry. Advisory committees of specialists drawn from these sectors review research projects. The council is financed by provincial government appropriations and through research contracts with private industry and government agencies. Main council laboratories and offices are on the University of Alberta campus, with a pilot plant and laboratory facility east of Edmonton and subsidiary offices and laboratories in other parts of the city. The full-time staff comprises approximately 400.

In British Columbia BC Research is a non-profit industrial research society with offices and laboratories at Vancouver. Its activities enable even the smallest firms to improve their competitive position in Canadian and world markets by the use of up-to-date scientific knowledge. The agency does contract research for clients on a confidential basis, initiates in-house research programs to promote and use the resources of the province, and provides a free technical information service in collaboration with the National Research Council of Canada. It is active in applied biology, chemistry, engineering — physics, ocean engineering, operations research, industrial engineering — and social impact and economic studies.

Sources

14.1 - 14.2.4 *Federal science activities, 1980-81*, Communications Services Division, Ministry of State for Science and Technology.

14.3 Supplied by respective provincial departments and agencies.

Tables

...	not available	e	estimate
...	not appropriate or not applicable	p	preliminary
—	nil or zero	r	revised
—	too small to be expressed	certain tables may not add due to rounding	

Forecast expenditures, 1979-80; estimated expenditures, 1980-81.

14.1 Federal expenditures on the natural and human sciences by major funding department or agency (million dollars)

Department or agency	Natural sciences			Human sciences		
	1978-79	1979-80	1980-81	1978-79	1979-80	1980-81
Agriculture	124.1	138.7	151.9	3.1	3.3	3.8
Communications	55.9	58.8	60.8	6.0	6.3	5.5
Energy, Mines and Resources	116.1	133.6	156.8	8.5	10.1	11.0
Atomic Energy of Canada Limited	92.0	91.3	96.5	—	—	—
Environment	193.9	201.7	215.2	12.5	13.7	14.6
External Affairs						
Canadian International Development Agency	30.5	32.5	34.0	5.1	5.3	4.7
International Development Research Centre	19.4	18.6	20.2	17.4	17.2	19.8
Fisheries and Oceans	119.4	109.0	112.9	3.1	3.4	3.5
Industry, Trade and Commerce	59.8	72.8	101.8	1.6	2.0	3.0
National Defence	81.6	91.7	102.1	1.7	1.7	1.8
National Health and Welfare	36.8	32.4	36.0	21.3	16.0	18.0
Medical Research Council	64.2	70.1	80.0	—	—	—
Science and Technology						
National Research Council	197.2	211.2	227.7	—	—	—
Natural Sciences and Engineering Research Council	111.9	121.1	163.0	—	—	—
Secretary of State						
National Library	—	—	—	13.1	14.7	17.2
National Museums of Canada	19.1	18.4	18.9	36.0	32.9	33.6
Social Sciences and Humanities Research Council	—	—	—	34.6	36.6	42.6
Statistics Canada	—	—	—	133.3	127.7	139.9
Transport Canada	41.3	26.8	25.5	0.7	0.3	0.1
Sub-total	1,363.2	1,428.7	1,603.3	298.0	291.2	319.1
Others	34.6	39.8	43.5	113.3	124.1	128.0
Total	1,397.8	1,468.5	1,646.8	411.3	415.3	447.1

14.2 Federal expenditures on natural sciences R&D and RSA by performer, 1978-81 (thousand dollars)

Performer	1978-79		1979-80		1980-81	
	\$	%	\$	%	\$	%
R&D						
Intramural ¹	583,406	57.7	592,566	54.5	658,496	53.0
Industry	181,804	18.8	214,730	19.7	238,117	19.2
Universities	190,298	18.8	203,258	18.7	252,672	20.3
Non-profit institutions	8,276	0.8	8,050	0.7	8,684	0.7
Provincial and municipal	13,781	1.4	32,568	3.0	44,123	3.6
Foreign	29,293	2.9	31,486	2.9	34,674	2.8
Other Canadian	4,341	0.4	4,782	0.4	5,275	0.4
Total	1,011,199	100.0	1,087,440	100.0	1,242,041	100.0
RSA						
Intramural ¹	296,085	76.6	293,968	77.1	316,566	78.2
Industry	57,970	15.0	50,014	13.1	49,809	12.3
Universities	13,747	3.6	14,210	3.7	21,049	5.2
Non-profit institutions	2,500	0.6	2,609	0.7	2,798	0.7
Provincial and municipal	7,503	1.9	9,286	2.4	6,591	1.6
Foreign	2,424	0.6	2,627	0.7	3,265	0.8
Other Canadian	6,329	1.6	8,347	2.2	4,688	1.2
Total	386,558	100.0	381,061	100.0	404,766	100.0

¹Intramural expenditures do not include non-program costs.

14.3 Federal expenditures on human sciences R&D and RSA by performer, 1978-81 (thousand dollars)

Performer	1978-79		1979-80		1980-81	
	\$	%	\$	%	\$	%
R&D						
Intramural ¹	42,209	42.1	42,406	42.4	45,268	43.9
Industry	4,886	4.9	6,582	6.6	4,856	4.7
Universities	26,018	25.9	27,467	27.4	32,914	31.9
Non-profit institutions	11,328	11.3	9,384	9.4	5,941	5.8
Provincial and municipal	3,796	3.8	2,174	2.2	2,051	2.0
Foreign	10,349	10.3	9,871	9.9	9,988	9.7
Other Canadian	1,680	1.7	2,201	2.2	2,058	2.0
Total	100,266	100.0	100,085	100.0	103,076	100.0
RSA						
Intramural ¹	266,646	85.7	271,845	86.2	295,929	86.0
Industry	9,592	3.1	9,779	3.1	11,167	3.2
Universities	14,862	4.8	13,963	4.4	15,752	4.6
Non-profit institutions	5,246	1.7	5,338	1.7	5,710	1.7
Provincial and municipal	4,481	1.4	4,402	1.4	5,000	1.5
Foreign	4,959	1.6	4,687	1.5	5,132	1.5
Other Canadian	5,218	1.7	5,192	1.6	5,375	1.6
Total	311,004	100.0	315,206	100.0	344,065	100.0

¹Intramural expenditures do not include non-program costs.

14.4 Expenditures of provincial research organizations by scientific activity, 1978 (thousand dollars)

Provincial research organization	Scientific research	Development	Resource surveys	Analysis and testing	Industrial engineering	Other ¹	Total
Nova Scotia	535	841	229	382	204	356	2,547
New Brunswick	381	559	76	1,119	153	255	2,543
Quebec	501	2,976	—	1,567	78	2,710	7,832
Ontario	2,900	3,950	—	3,333	200	650	11,033
Manitoba	—	366	—	—	23	69	458
Saskatchewan	2,175	673	—	570	259	1,501	5,178
Alberta	3,611	3,998	1,934	1,161	903	1,290	12,897
British Columbia	1,115	813	—	577	354	1,205	4,064
Total	11,218	14,176	2,239	8,709	2,174	8,036	46,552

¹Feasibility studies, \$2.5 million; library and technical information, \$3.7 million; industrial innovation, \$1.3 million; and other, \$520,000.

14.5 Federal scientific expenditures by application area (million dollars)

Area and department or agency	1978-79	1979-80	1980-81
Communications	31.4	36.5	39.4
Communications	21.1	23.8	26.7
National Research Council	3.6	2.8	3.1
Canadian Broadcasting Corporation	3.1	3.3	3.5
Others	3.6	6.6	6.1
Domestic security¹	7.2	8.4	9.2
Justice	2.6	3.4	3.9
Law Reform Commission	2.3	2.4	2.8
Solicitor General	2.3	2.6	2.5
Energy²	173.5	204.2	230.0
Energy, Mines and Resources	44.8	65.5	79.7
Atomic Energy of Canada Ltd.	85.1	83.5	88.8
Environment	0.4	4.9	5.1
Fisheries and Oceans	7.9	7.5	7.8
Industry, Trade and Commerce	1.7	1.1	1.5
National Research Council	21.9	28.9	31.8
Natural Sciences and Engineering Research Council	4.0	3.8	4.9
Public Works	0.4	1.1	2.0
Transport	3.5	3.5	3.7
Others	3.8	4.4	4.7
Environmental issues	53.9	57.4	58.7
Energy, Mines and Resources	2.4	2.5	2.9
Environment	41.8	42.9	42.2
Fisheries and Oceans	2.5	2.2	2.4
National Research Council	3.2	3.8	4.2
Natural Sciences and Engineering Research Council	2.4	2.7	3.6
Others	1.6	3.3	3.4

14.5 Federal scientific expenditures by application area (million dollars) (concluded)

Area and department or agency	1978-79	1979-80	1980-81
Food science	178.4	187.1	203.1
Agriculture	118.8	126.1	139.2
Fisheries and Oceans	35.9	34.4	34.1
National Health and Welfare	3.9	4.4	5.0
National Research Council	9.6	10.5	11.4
Natural Sciences and Engineering Research Council	—	1.8	3.6
Statistics Canada	5.3	5.0	5.5
Others	4.9	4.9	4.3
Health science	125.7	126.0	141.4
Energy, Mines and Resources	0.9	0.9	1.3
Atomic Energy of Canada Ltd.	6.9	7.7	7.7
National Health and Welfare	42.0	34.3	38.2
Medical Research Council	64.2	70.1	80.0
National Research Council	7.3	8.6	9.4
Statistics Canada	3.9	3.7	4.0
Others	0.5	0.7	0.8
Forestry resources	32.3	32.1	32.0
Environment	30.3	30.2	29.9
Others	2.0	1.9	2.1
Mineral resources	39.7	37.1	42.0
Energy, Mines and Resources	39.2	36.8	41.6
Others	0.6	0.4	0.4
Oceans science	54.4	52.2	53.4
Energy, Mines and Resources	3.7	4.4	4.9
Environment			
Atmospheric Environment Service	8.6	8.4	8.4
Fisheries and Oceans	33.3	30.9	31.2
National Research Council	3.3	3.7	3.9
Natural Sciences and Engineering Research Council	1.2	1.7	2.8
Others	4.3	3.1	2.2
Scientific and technical information	112.5	118.8	131.0
Consumer and Corporate Affairs	8.1	8.3	8.7
Energy, Mines and Resources	5.0	5.5	6.0
Environment	13.5	14.1	14.9
International Development Research Centre	3.1	3.3	4.0
National Library	12.8	14.7	17.1
National Research Council	15.0	18.6	21.5
Public Archives	7.9	8.6	9.7
Social Sciences and Humanities Research Council	3.3	4.1	4.8
Statistics Canada	9.8	9.2	10.1
Others	34.0	32.4	34.2
Social development	28.5	28.1	28.2
Employment and Immigration	2.3	1.9	1.9
Labour	3.3	3.2	3.8
National Health and Welfare	11.9	9.5	10.6
National Research Council	2.6	3.4	3.4
Statistics Canada	3.4	3.2	3.5
Others	5.0	6.8	5.0
Space science and satellite technology	79.7	62.9	54.8
Communications	40.7	41.2	39.6
Environment	1.7	1.9	2.2
National Research Council	36.9	19.3	12.5
Others	0.4	0.5	0.5
Transportation	89.8	73.3	73.7
Energy, Mines and Resources	2.3	1.9	2.5
Fisheries and Oceans	25.2	23.1	23.9
National Research Council	15.9	18.0	19.1
Transport Canada	38.6	23.6	21.9
Canadian Transport Commission	3.6	2.7	2.7
Statistics Canada	2.9	2.7	3.0
Others	1.3	1.3	0.6

¹Does not include RCMP expenditures.

²Does not include expenditures under the interdepartmental panel on energy R&D.

Source

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Transportation services

15.1

Transportation is a vital element in Canada's socio-economic fabric. The vast distances which separate the scattered pockets of population make all forms of transportation important in the daily life of Canadians in all parts of the country.

Transport Canada (the federal department of transport) carries out the federal responsibilities in this field. It must not only satisfy traditional transportation objectives of moving people and commodities but also support other government goals in such areas as economic and industrial development, environmental protection, energy and sovereignty.

It would be impossible and indeed inadvisable for Transport Canada to attempt to provide all transportation services and facilities. Its role is one of co-ordination and regulation to ensure maximum safety and efficiency, functioning through a complex structure which includes a headquarters organization; three operating administrations for air, marine and surface transportation; and a number of Crown corporations with varying degrees of autonomy. Some of these operate within the departmental framework, others are totally independent and report to Parliament through the minister of transport. (See Appendix 1 for brief descriptions of the duties of the department and other agencies.)

Although air, marine and surface activities are handled by separate administrations, it has become increasingly important in recent years to deal with the various elements as parts of one network. This is true of much of the longer-term planning and policy making, and certain operational areas which involve more than one mode of transport. The Arctic transportation directorate develops, promotes and co-ordinates multi-modal plans and programs for facilities in the Yukon and Northwest Territories, maintaining contact with other federal agencies, the territorial governments, industry and the public. The current major initiative in the Arctic is the building or upgrading of airports in all communities having a population of at least 150.

An area of increasing concern is the transporting of explosives, corrosives and other dangerous goods. Training programs are being given to firemen and others involved in emergency services. An information and emergency response centre was opened in Ottawa in 1979, prepared to respond to telephone enquiries from all parts of Canada 24 hours a day. With the increase of traffic of all kinds has come an increase in the number of transportation accidents. Consideration has been given to establishing an independent transportation accident investigation commission which would have the power to look into any aircraft, ship or train accident and report its findings to the minister of transport.

Research and development are essential to keep pace with changing needs. Transport Canada is responsible for co-ordinating this federal program through an interdepartmental panel of 17 federal agencies with a combined annual expenditure of about \$100 million. Four advisory boards of industry and government have been set up to convey the needs of industry and other interested parties to Transport Canada and the panel.

In the department a research and development centre conducts activities on all modes of transport. It works closely with industry to encourage the development of innovations for economic use. Among its recent achievements are a light, rapid, comfortable (LRC) train capable of speeds up to 200 km/h, and the world's first fully computerized, paperless, railway yard inventory, operating in Vancouver. It has also developed a dynamic weigh scale, in use in five provinces, which can determine the weight of a vehicle moving at normal speed on a highway.

For some years, the Canadian Coast Guard has been using air cushion vehicles for icebreaking. This concept is being developed further to extend the shipping season and range of operations in the St. Lawrence Seaway and Great Lakes. In air transportation,

research consists of designing light aircraft with improved crash survival features; developing energy efficient small aircraft; and reducing hazards caused by bird strikes.

The National Transportation Act (RSC 1970, c.N-17) defines a national transportation policy for Canada with a view to achieving maximum efficiency in all available modes of transportation at the lowest cost. The act established the Canadian Transport Commission (CTC) to carry out functions formerly performed by the Board of Transport Commissioners for Canada, the Air Transport Board and the Canadian Maritime Commission. It created a framework within which the CTC might regulate interprovincial and international motor transport and transportation by pipeline of commodities other than oil and gas.

The Canadian Transport Commission has established several committees, five of which are railway transport, air transport, water transport, commodity pipeline transport and motor vehicle transport. The commission is a court of record. Its decisions are binding within its jurisdiction and may be reviewed only by appeal to the Supreme Court of Canada on a question of law or jurisdiction, or by the Governor-in-Council. However, a party to a licence application under the Aeronautics Act or the Transport Act may appeal to the transport minister.

The commission has jurisdiction under several acts, including the Railway Act, the Aeronautics Act and the Transport Act, over transportation by rail, air and inland water.

Under the Railway Act the commission has jurisdiction over construction, maintenance and operation of railways that are subject to the legislative authority of Parliament, including matters of engineering, location of lines, crossings and crossing protection, safety of train operation, operating rules, investigation of accidents, accommodation for traffic and facilities for service, abandonment of operation and uniformity of railway accounting. The commission regulates tolls for the use of international bridges and tunnels.

Except for certain statutory rates, and subject to certain powers to deal with rates that the commission finds to be contrary to the public interest, the railways are free under the statutes to establish freight rates in accordance with market forces. This feature is constrained by a lower limit, with all rates compensatory, and an upper limit which provides for determining a rate for a shipper when no alternative, effective and competitive service is available by a common carrier other than a rail carrier.

The commission is responsible for the economic regulation of commercial air services in Canada and is required to advise the transport minister on matters relating to civil aviation. The regulatory function relates to Canadian air services within Canada and abroad and to foreign air services operating into and out of Canada. Because of this responsibility the CTC participates in bilateral negotiations for the exchange of traffic rights. The commission is responsible for licensing commercial air services and regulating the licensees. It issues regulations dealing with, among other things, the classification of air carriers and commercial air services, licences, tariffs, service schedules and statistical reporting. The CTC also takes an active part in the work of international organizations and conferences related to economic matters of air transport.

As provided by the Transport Act, the commission grants licences for ships to transport goods and passengers between ports or places in Canada on the Great Lakes, on the St. Lawrence and Mackenzie rivers, and in the Western Arctic. Provisions of the act do not apply to the transport of goods in bulk other than on the Mackenzie River. The commission must determine that the service is required. Tariffs of tolls must be filed and the commission has regulatory powers over such tolls.

The commission, under the Pilotage Act, is empowered to investigate objections to proposed tariffs of pilotage charges, to hold public hearings, and to make recommendations to the appropriate pilotage authority. Under the Shipping Conferences Exemption Act, ocean carriers which are members of a shipping conference are required to file with the commission copies of their agreements, arrangements, contracts, patronage contracts and tariffs. These documents are available for public inspection.

The commission is also authorized, under the St. Lawrence Seaway Authority Act, to consider any complaint of unjust discrimination in an existing tariff and to report its findings to the authority.

In Canada the coasting trade laws restrict the operation of ships from one point to another to Canadian or British ships, depending upon the area. To enable a ship of any foreign country to engage in such operations, application has to be made to the national revenue minister to obtain a waiver of the coasting laws. The commission then advises the minister as to the availability of a suitable Canadian ship.

Rail transport

15.2

Canadian railway transport is dominated by two transcontinental systems, supplemented by regional railways. The government-owned Canadian National Railway system is the largest public utility and operates the longest trackage in Canada. It serves all 10 provinces as well as the Great Slave Lake area of the Northwest Territories. It also operates a highway transport service, a fleet of coastal steamships, a chain of large hotels and resorts, a telecommunications service, and as an autonomous subsidiary a scheduled Canadian and international air service, Air Canada. Canadian Pacific Ltd. is a joint-stock corporation operating a railway service in eight provinces. Similar to and competitive with the Canadian National Railway system, it is a multi-transport organization with a fleet of inland and ocean-going vessels as well as coastal vessels, a fleet of trucks, a chain of year-round and resort hotels, a telecommunications service, and a domestic and foreign airline service. Through a major subsidiary, Canadian Pacific Investments Ltd., interests are held in mining (for example, Cominco Ltd.), oil and gas, forest products, real estate and related operations, hotel and food services, and steel production and associated services. The British Columbia Railway operates a 2063-kilometre route from North Vancouver to Fort Nelson in northeastern British Columbia. The Northern Alberta Railway, jointly owned by CP and CN, serves the area north of Edmonton with a 1485-km system. Northern Ontario is served by the provincially owned Ontario Northland Railways with a 925-km system stretching from North Bay to Moosonee, and by the privately owned Algoma Central Railway operating over 516 km of line between Sault Ste Marie and Hearst.

In addition, a US-Canada passenger service inaugurated by the National Railroad Passenger Corp., AMTRAK, is operated between Seattle, Wash. and Vancouver, BC and between Montreal, Que. and Washington, DC via New York City, Springfield, Mass. and resort areas in Vermont.

The largest contributors to Canada's total 1977 railway revenue were Canadian National (53.9%) and Canadian Pacific (36.0%). The Quebec North Shore and Labrador Railway, built to transport ore and concentrates from the iron mines of the Schefferville and Wabush areas of Quebec and Labrador to water transportation facilities on the St. Lawrence River, accounted for 2.1% of the revenues. Other individual railways contributing 1% or more were the British Columbia Railway (2.3%) and the Ontario Northland Railways (1.2%).

In recent years, railways have faced strong competition from highway and air transport. Still indispensable for carrying bulk commodities, railways are necessary to the development of natural resources in isolated areas. Only pipelines have competed with them by providing an alternate economical means of transporting the products of oil and gas fields for long distances overland.

The rapid growth of containerization has made the integration of railway, highway, shipping and other modes of transport of growing importance. Canada's two major railways are already involved in several forms of transportation. They have evolved from a virtual monopoly, through a highly competitive stage to co-operation and co-ordination with other modes of transport.

VIA Rail Canada Inc. was incorporated on January 12, 1977 with a mandate to revitalize passenger rail services in Canada and to manage and market them on an efficient commercial basis, reducing the financial burden on the government. VIA operates under contract with the federal government to provide designated passenger rail services, entering into contracts with the railways for the operation of trains. It operates as an autonomous Crown corporation. Its income is derived from passenger revenues and payments received from the federal government under passenger rail services contracts. With the exception of commuter services, VIA is totally responsible

for all intercity passenger trains previously operated by CN and CP rail and has integrated the passenger rail services staffs of the two railway companies under a single administration. Nearly 4,000 former CN and CP rail employees have joined VIA.

15.2.1 Government aid

In the 19th century governments promoted railway building. Private developers received assistance in land grants, cash payments, loans or purchase of shares. Debenture issues of the Canadian National Railway system, except those for rolling-stock, are guaranteed by the federal government. Provincial governments had guaranteed the bonds of some lines that were later incorporated in the CNR system. As these mature or are called, they are paid off by the CNR in large measure through funds raised by issuing new bonds guaranteed by the federal government. At December 31, 1977 railway bonds guaranteed by the Government of Canada amounted to \$498 million. In recent years other forms of federal government assistance have included rehabilitation of railway branch lines and the acquisition and refurbishing of railway equipment.

The National Transportation Act provided for normal railway subsidy payments of \$110 million for 1967, declining by \$14 million a year, the last payment being \$12 million for 1974, and allows railways to file claims and receive specific payments for losses incurred on branch lines and passenger-train services. Total payments of \$275.8 million for 1976 represented specific payments to the two major railways. Claims for 1977 had to be filed by June 30, 1978.

In September 1978 a new assistance program was introduced on goods moving in the Atlantic region. This replaces subsidies previously received by railways under the Maritime Freight Rates Act and by truckers under a 1970 assistance program. The new program authorizes selective assistance on a designated list of commodities native to the region and requires carriers to reduce rates, otherwise applicable, by 15%. Air carriers and water carriers are also included in the revised program. Non-designated commodities were eligible for temporary provisional assistance which related to a 7.5% reduction in rates, until August 31, 1979. Since that date, assistance has been paid on designated commodities only.

15.2.2 Rail transport statistics

Trackage and rolling-stock. Table 15.2 illustrates the historical development of first main track from 28 416 kilometres in 1900 to 69 967 km in 1977. It also presents statistics on main and other types of track by province and territory and that operated by Canadian carriers in the US for the years 1973-77.

Table 15.3 gives freight and passenger equipment in operation in 1976 and 1977. Freight carrying capabilities of the railways are steadily being improved with larger, more efficient cars and locomotives and modernized handling and terminal services. Each year hundreds of units, particularly freight cars, are converted and modified for specific types of traffic or are replaced by special-purpose equipment for particular hauling jobs. Because of the fuel consumption efficiency of the railways and higher fuel costs, there is a trend to greater freight movement by rail. Container and piggyback traffic has also increased.

Revenue freight. Total freight carried by all common carrier railways (including national loadings and receipts from US connections) in 1976 and 1977 is shown in Table 15.4 under the commodity structure adopted in 1970 based on Statistics Canada's standard commodity classification.

Capital structure and finance. Tables 15.5 - 15.8 give information on capital investment in road and equipment, and on operating revenues, expenses and net income of all common carrier railways operating in Canada, except those of the Cartier Railway which are not available. In transportation statistics a distinction is made between expenditures and expenses. The term expenses refers to the cost of furnishing rail transportation service and of associated operations, including maintenance and depreciation of the plant used in such service.

Kilometre Guide	Calgary	Charlottetown	Edmonton	Fredericton	Halifax	Montreal	Ottawa	Quebec	Regina	St. John's	Saskatoon	Thunder Bay	Toronto	Vancouver	Victoria	Whitehorse	Winnipeg	Yellowknife
Calgary	●	4917	299	4558	5042	3743	3553	4014	764	6183	620	2050	3434	1057	1123	2385	1336	1811
Charlottetown	4917	●	4949	359	232	1184	1374	945	4163	1294	4421	2878	1724	5985	6051	7034	3592	6460
Edmonton	299	4949	●	4598	5082	3764	3574	4035	785	6212	528	2071	3455	1244	1310	2086	1357	1511
Fredericton	4558	359	4598	●	346	834	1024	586	3813	1622	4070	2527	1373	5634	5700	6684	3241	6109
Halifax	5042	232	5082	346	●	1318	1508	912	4297	1349	4554	3011	1857	6119	6185	7168	3726	6593
Montreal	3743	1184	3764	834	1318	●	190	270	2979	2448	3236	1693	539	4801	4867	5850	2408	5275
Ottawa	3553	1374	3574	1024	1508	190	●	460	2789	2638	3046	1503	399	4611	4677	5660	2218	5086
Quebec	4014	945	4035	586	912	270	460	●	3249	2208	3507	1963	810	5071	5137	6120	2678	5546
Regina	764	4163	785	3813	4297	2979	2789	3249	●	5427	257	1286	2670	1822	1888	2871	571	2297
St. John's	6183	1294	6212	1622	1349	2448	2638	2208	5427	●	5684	4141	2987	7248	7314	8298	4855	7723
Saskatoon	620	4421	528	4070	4554	3236	3046	3507	257	5684	●	1543	2927	1677	1743	2614	829	2039
Thunder Bay	2050	2878	2071	2527	3011	1693	1503	1963	1286	4141	1543	●	1384	3108	3174	4157	715	3582
Toronto	3434	1724	3455	1373	1857	539	399	810	2670	2987	2927	1384	●	4492	4558	5528	2099	4966
Vancouver	1057	5985	1244	5634	6119	4801	4611	5071	1822	7248	1677	3108	4492	●	66	2697	2232	2411
Victoria	1123	6051	1310	5700	6185	4867	4677	5137	1888	7314	1743	3174	4558	66	●	2763	2298	2477
Whitehorse	2385	7034	2086	6684	7168	5850	5660	6120	2871	8298	2614	4157	5528	2697	2763	●	3524	2704
Winnipeg	1336	3592	1357	3241	3726	2408	2218	2678	571	4855	829	715	2099	2232	2298	3524	●	2868
Yellowknife	1811	6460	1511	6109	6593	5275	5086	5546	2297	7723	2039	3582	4966	2411	2477	2704	2868	●
Official highway distances																		

The capital structure of the Canadian National Railway system is presented in Table 15.6 and financial details of operations in both Canada and the United States in Table 15.7. Revenues and expenses include those of express and commercial communications and highway transport (rail) operations. Tax accruals and rents are charged to operating expenses.

Reaching peak levels, total operating revenues increased 10.8% and expenses rose 8.9% for common carrier railways operating in Canada (except the Cartier Railway) in 1977 as calculated from Table 15.8. A net operating income of \$189.0 million was recorded in 1977.

Road transport

15.3

The federal government establishes motor vehicle safety standards, while the provincial and territorial governments are responsible for the registration of motor vehicles and regulation of motor vehicle traffic.

Federal safety regulations

15.3.1

The Motor Vehicle Safety Act, in effect since January 1971, establishes mandatory safety standards to ensure that new motor vehicles, manufactured in Canada or imported, meet minimum vehicle safety and environment protection standards. The standards are for the safe design, construction and functioning of new motor vehicles in

order to save lives and prevent injuries. The legislation requires that all new vehicles and their components meet motor vehicle safety regulations at the point of manufacture or importation and obliges manufacturers to issue notices of safety defects. The safety of vehicles in use is a provincial responsibility.

The road and motor vehicle safety branch of Transport Canada administers the Motor Vehicle Safety Act and the Motor Vehicle Tire Safety Act, and enforces regulations pertaining to them. A co-operative federal-provincial program aimed at reducing the fatality rate by 15% on Canadian roads by 1979 exceeded expectations and resulted in a reduction of 36% from an all-time high in 1973. In May 1979, the department opened a new motor vehicle test centre at Blainville, Que.

Safety regulations include 43 standards for the design and performance of passenger cars, trucks, buses, motorcycles, competition motorcycles, minibikes and trailers; six standards limiting motor vehicle exhaust, evaporative and noise emissions; and 11 standards for snowmobiles. These standards are reviewed and revised regularly to keep pace with engineering or technical advances. The regulations require all Canadian motor vehicle manufacturers or distributors to apply the national safety mark, accompanied by a label certifying compliance with all applicable federal motor vehicle safety standards, to every classified vehicle produced after January 1, 1971. Vehicles imported for sale or private use must also be certified.

The Motor Vehicle Tire Safety Act, adopted by Parliament in April 1976, provides authority for the enforcement of minimum safety standards for certain motor vehicle tires manufactured in or imported into Canada.

15.3.2 Motor vehicle and traffic regulations

Motor vehicle and traffic regulations in force in 1979 are outlined in Table 15.14. This table includes requirements in all provinces, the Northwest Territories and Yukon for a driver's licence for different types of vehicles, times of renewal of licences, types of motor vehicle insurance and speed limits.

Registration plates. Motor vehicles and trailers are usually registered annually with the payment of specified fees. Most motor vehicles carry a registration plate on the front and one on the rear; trailers carry one on the rear. In Manitoba, Saskatchewan and Alberta passenger cars, vehicles licensed for Drive-ur-self service and trucks carry two plates. Vehicles operated by dealers, motorcycles and off-highway vehicles have one rear licence plate. In Quebec a single licence plate is displayed on motor vehicles. In some provinces, multi-year plates are issued and validated annually by stickers. In some provinces registration plates stay with the vehicle when it is sold, but in others the owner retains them.

Safety responsibility legislation. Each province has enacted safety responsibility legislation. In general, laws provide for the automatic suspension of the driver's licence and motor vehicle registration of a person convicted of a serious offence (impaired driving, driving under suspension, dangerous driving) or a person whose uninsured vehicle is involved directly or indirectly in an accident resulting in damage of a specified amount or injury or death to any person.

Insurance and unsatisfied judgment fund. In 1978, with the exception of Ontario, all provinces, the Northwest Territories and Yukon had a compulsory insurance plan in effect (Table 15.14). Most provinces have enacted legislation providing for the establishment of a fund, frequently called an unsatisfied judgment fund (in Ontario and Alberta, the Motor Vehicle Accident Claims Fund). Judgments awarded for damages arising out of motor vehicle accidents which cannot be collected by the ordinary process of law were paid out of this fund. In Newfoundland, Prince Edward Island and Nova Scotia the fund was maintained by insurance companies. Funds in Ontario were obtained by collecting an annual fee of \$150 from the registered owner of every uninsured motor vehicle and a one dollar fee from every person to whom a driver's licence was issued.

Additional provincial details. Other details of motor vehicle and traffic regulations particular to individual provinces in 1979 follow.

In Newfoundland, one year's experience as a licensed driver is required to drive commercial classes other than cars or light trucks. Accidents resulting in personal injury or death, or property damage in excess of \$200 must be reported to a police officer. All motor vehicles except motorcycles and trailers must display two licence plates, with the registration year ending March 31 of any year. In Prince Edward Island the legislation in effect comes under the Highway Traffic Act and regulations and Off-highway Vehicle Act and regulations.

In Nova Scotia all vehicle registrations expire December 31 of each year; a three-month extension is granted for passenger vehicles and one month for commercial vehicles. All vehicles are required to be inspected annually. It is an offence to operate a motor vehicle without financial responsibility insurance. Driver files are continuously reviewed, with a demerit point system and a medical advisory committee on driver licensing used to make drivers improve or to remove the unsafe driver from the highways.

In New Brunswick a person must be age 14 or over to operate a moped, but 16 to operate a motorcycle.

In Quebec, use of seat belts is mandatory for persons occupying the front seat of a pleasure vehicle. The period during which a learner-driver's permit is valid is five months. The owner of a vehicle makes his contribution to the automobile insurance plan (coverage against bodily injury provided by the province) when he registers his vehicle. At the same time, the bureau makes certain that the owner is insured against damage to property (this insurance is through private companies).

In Ontario, exemption from registration is granted for six months for non-residents from other provinces and three for residents of another country or state. A certificate of mechanical fitness is required before a vehicle sold second-hand can be issued a permit for operation. Accidents resulting in personal injury or property damage in excess of \$400 must be reported to a police officer.

In Manitoba all motor vehicles, certain campers, and trailers must be registered; semi-trailers must also be registered and display an identification number plate. Multi-year plates are issued and validated annually by stickers. Passenger car registration fees are based on weight. Vehicle inspection is compulsory by random selection and at time of sale of used vehicles. mopeds may be driven with any licence class. The driver's licence is also a certificate of insurance for which an insurance premium is payable. Non-residents or new residents holding a valid licence may drive up to 90 days.

In Saskatchewan all motor vehicles including trailers and semi-trailers must be registered. Registrations may be transferred from one vehicle to another by the owner. Proof of ownership must be provided on application. Except for commercial or farm vehicles, out-of-province vehicles may be operated for 90 days without requiring Saskatchewan registration. Students may operate out-of-province vehicles while attending a school in Saskatchewan. Out-of-province drivers involved in an accident in Saskatchewan are required to provide proof of financial responsibility; failure to do so will result in the vehicle being impounded. All accidents resulting in damage over \$200 or in personal injury must be reported to a police officer immediately.

Alberta motor vehicles and trailers are registered annually by paying specified fees and providing proof of vehicle insurance. Passenger car registration plates remain with the owner when the vehicle is sold. Regulations permit non-residents temporarily in Alberta to operate vehicles currently registered in their home province or in the United States for six months; the period is extended to a school year for out-of-province students whose vehicles carry non-resident student stickers.

In British Columbia, seat belts must be used at all times in all passenger vehicles of 1965 or later, and commercial vehicles of 1973 or later. The driver is responsible for ensuring that passengers between ages 6 and 15 are properly buckled up; persons age 16 and older are responsible for themselves. In BC 60-70% of all motor vehicles are required to be mechanically inspected.

In Yukon, registration plates remain with the owner of the vehicle and may be transferred to a vehicle of the same type upon payment of a prescribed fee. All vehicles in Yukon must be registered; an exemption is given to tourists who do not remain more than 90 days. Safety regulations require all vehicles to meet certain standards.

In the Northwest Territories motor vehicles and trailers are registered annually with the payment of specified fees and proof of vehicle insurance. Regulations permit non-residents temporarily in the Northwest Territories to operate vehicles, currently registered in their home province, for three months.

15.3.3 Road transport statistics

Roads and streets. At the end of 1976 Canada had 308 662 kilometres of highways and roads under federal or provincial jurisdictions and 575 611 km of roads and streets under local government jurisdiction (Table 15.9). Most are in the more populated sections. Roads built by logging, pulp and paper, and mining companies provide some access to remote communities but large areas of most provinces and the territories are still sparsely settled and are virtually without roads. Table 15.10 presents expenditure data for all roads and streets in 1975 and 1976.

Road motor vehicles. Registrations reached a record of 12.5 million in 1977. Of that total, 9.6 million were passenger cars. Registration by province is given in Table 15.11 and types of vehicles registered by province in Table 15.12.

Taxation of motive fuels, motor vehicles, garages, drivers and chauffeurs is a source of provincial revenue. In every province licences or permits are required for motor vehicles, trailers, operators or drivers, paid chauffeurs, dealers, garages and gasoline and service stations. The more important sources from which revenue from motor vehicles is derived are shown in Table 15.13.

Motive fuels for motor vehicle use are taxable at the point of sale. To estimate the amount of fuel sold for road motor vehicles, tax-exempt sales to the federal government and other consumers, exports and sales on which tax refunds are paid are eliminated from gross sales. Table 15.15 presents data on consumption of gasoline and net sales of diesel oil over five years.

Statistics of intercity bus companies for 1976 and 1977 are shown in Table 15.16. Table 15.17 presents summary statistics of the Canadian urban transit industry, and Table 15.18 of the motor carriers (freight).

15.4 Water transport

Because of Canada's size, geography and dependence on trade, water transport has always played a dominant role in the economic system. Historically, the earliest industries developed because of convenient access to water transportation. To the present day, water transport has continued to be a relatively cheap and easy means of moving raw materials and consumer goods.

Statistics on water transportation. In 1974 the transportation and communications division of Statistics Canada developed a water transportation data sheet to replace an annual water transportation report used for more than 30 years to survey water transportation in Canada. In 1976 separate tabulations were compiled for private, for-hire and government carriers. The survey included all Canadian-domiciled water carriers transporting freight, passengers or both overseas or on inland and coastal waterways.

Water transportation in 1977 generated revenues of \$1.415 billion for 569 Canadian domiciled for-hire, private, government and sightseeing carriers, compared with 1976 revenues of \$1.277 billion for 544 carriers. The largest portion of these revenues in 1977, \$920.6 million, was generated by 419 for-hire carriers representing the for-hire water transportation industry; in 1976 there were 409 for-hire carriers which generated \$860.6 million. The water transport operations of 86 private carriers accounted for \$230 million in 1977 compared with \$207.6 million by 67 private carriers the previous year. The 41 government carriers accounted for \$259.8 million, up from 40 carriers and \$205.8 million in 1976. Sightseeing undertakings contributed the balance of the total revenue.

The 569 carriers in 1977 employed 19,285 crew who earned wages totalling \$333.9 million. In 1976 the 544 carriers employed 19,809 crew whose total wages were \$303.8 million.

The Canada Shipping Act (RSC 1970, c.S-9), is the most significant statute dealing with shipping. Other legislative measures include the Pilotage Act, the Arctic Waters Pollution Prevention Act and the Navigable Waters Protection Act. Under the Canada Shipping Act, the Arctic Waters Pollution Prevention Act and their amendments, the federal government has complete responsibility for regulating shipping in Canadian-controlled waters.

Shipping

15.4.1

Except for the coasting trade, all Canadian waterways, including canals, lakes and rivers, are open on equal terms to all countries, and Canadian ships must compete with foreign flag ships.

The carriage of goods and persons from one Canadian port to another is commonly known as the coasting trade. In the region from Havre-Saint-Pierre on the St. Lawrence River upstream to the head of the Great Lakes it is restricted to ships registered in Canada. Elsewhere in Canada the coasting trade is restricted to ships registered and owned in a Commonwealth country.

Canadian registry. Part I of the Canada Shipping Act sets out the sizes, types and ownership of vessels which must be registered. As at December 31, 1978, there were 31,068 ships constituting 4,639,705 gross registered tons (equivalent to 13 138 183 cubic metres) in the Canadian registry. This was a decrease of 525 ships since 1976.

Shipping traffic. Table 15.22 shows the number and tonnage of all vessels entering Canadian customs and non-customs ports, except those of less than 15 net registered tons (equivalent to 42 m³), Canadian naval vessels and fishing vessels. A registered ton is an internationally recognized measure used to indicate the capacity of space within the hull, and the enclosed spaces above the deck of a vessel.

Freight movement through large ports includes cargoes for or from foreign countries and cargoes loaded and unloaded in the coasting trade between Canadian ports. Table 15.23 presents data by province on these freight movements. In 1978 a total of 300 million tonnes were loaded and unloaded at the principal Canadian ports, compared with 295 million tonnes in 1977. Many ports also have in-transit movement of vessels that pass through harbours without loading or unloading or move from one point to another within a harbour.

Shipping statistics, which cover traffic in and out of both customs and non-customs ports, do not include freight in transit or freight moved from one point to another within the harbour. Table 15.24 shows the principal commodities loaded and unloaded in international and coastal shipping at 20 ports handling large cargo volumes in 1977 and 1978. These ports handled 79.3% of Canada's international shipping in 1978 (82.9% in 1977) and 62.4% (65.3%) of the coasting trade. The specific commodities shown are those transported in volume, mainly in bulk.

Ports and harbours

15.4.2

Canada has 25 large deep-water ports and about 650 smaller ports and multi-purpose government wharves on the East and West coasts, along the St. Lawrence Seaway and Great Lakes, in the Arctic, and on interior lakes and rivers.

Administration of Canadian ports is generally under Transport Canada's Canadian Marine Transportation Administration (CMTA). Canada's harbours are subdivided into National Harbours Board ports, harbour commission ports, public harbours and government wharves. About 2,000 fishing harbours and facilities for recreational boating are administered by the fisheries and oceans department or the environment department.

The National Harbours Board, a Crown corporation, is responsible for administering the grain elevators at Prescott and Port Colborne, Ont. and port facilities such as wharves and piers, transit sheds and grain elevators at the harbours of St. John's, Nfld.; Halifax, NS; Saint John and Belledune, NB; Sept-Îles, Chicoutimi, Baie-des-Ha! Ha!, Quebec, Trois-Rivières and Montreal, Que.; Churchill, Man.; and Vancouver and Prince Rupert, BC. The number of vessels and the tonnage handled at these facilities in 1977 and 1978 are reported in Table 15.25.

Value before accumulated depreciation of fixed assets administered by the board was \$648 million at December 31, 1978, decreased from \$665 million at December 31, 1975. These figures include expenditures for developing berthing and terminal facilities, grain elevators and harbour buildings and equipment. The net book value after deducting accumulated depreciation was \$363 million. During 1978, the board had capital expenditures of \$30.6 million. Included in this was \$6.7 million at Halifax, \$4.5 million at Saint John, \$8.1 million at Montreal, \$4.0 million at Churchill and \$2.4 million at Vancouver.

Canada's major multi-purpose harbours are administered by the National Harbours Board or by harbour commissions. The commissions are corporate federal bodies, operating semi-autonomously under the general supervision of the department. The harbour commissions which include municipal as well as federal appointees, are responsible for general administration, operations and maintenance, and for liaison with the department and with the provincial, regional and local interests they serve.

More than 300 public harbours are directly administered by CMTA. Most harbour-masters and wharfingers at these ports are fees-of-office employees appointed by the minister of transport.

Many of the government wharves for which CMTA is responsible are located within public harbours and are used for commercial traffic including auto and truck ferries. Some major interprovincial federal ferry terminals are administered by the Canadian Surface Transportation Administration. Provincial governments administer intraprovincial ferry wharves.

Transport Canada is responsible for planning and providing adequate public port facilities to serve commercial interests and for improving or phasing out facilities in response to economic growth or changes in traffic patterns resulting from new industries, new types of ships and new developments in cargo handling. Specialized deep-water terminals for bulk commodities, particularly coal and oil, are also provided when needed under long-term full cost-recovery agreements with individual shippers. These often complement related development programs sponsored by the regional economic expansion department.

Transport Canada establishes and collects fees from users of port facilities. All rates assessed by ports under federal jurisdiction are subject to departmental approval. Harbour dues, cargo rates, wharfage, berthage and other charges on goods and vessels are subject to some regional and local variation.

In addition to public facilities, there are extensive wharf and associated cargo handling facilities owned by private companies, usually for handling coal, iron ore, petroleum, grain and pulpwood.

The continuing trend to larger ships has resulted in increased investment in ports for facilities farther from shore, for channel dredging, larger turning basins and more complex systems of aids to navigation and traffic control. Also, environmental considerations often require expensive terminal construction.

Increasing use of containers has brought significant changes in cargo routing and handling. Container ships travel at high speeds and port turnaround time is critical. Port facilities have to be efficient and specialized; they include special ramps for roll-on roll-off vessels; large container cranes which can handle 20 or more 14-tonne containers an hour; special container packing facilities; large open storage areas for containers, automobiles, lumber and bulk products such as coal; and facilities for loading and unloading mail cars and trucks.

15.4.3 Ferries

Ferries provide an important link between Canada's mainland and island areas. For constitutional and historical reasons, Transport Canada provides direct financial support to ferry and coastal shipping services in Eastern Canada and indirect support to a number of services in other regions.

In Eastern Canada, these services have been operated by Canadian National, with government subsidization. Increasing traffic in the early 1970s led to increasing deficit payments. To resolve this situation Transport Canada and CN agreed to establish a subsidiary corporation, CN Marine Inc., to handle the operations under a fixed-price

contract, with the government determining service levels and rates. The seven CN marine services are: North Sydney/Port aux Basques; North Sydney/Argentia; Tormentine/Borden; Digby/Saint John; Yarmouth/Bar Harbour; Yarmouth/Portland; and the Newfoundland coastal service. In 1978, these services received \$99.3 million in federal assistance.

Other subsidized services in Eastern Canada include Wood Island/Caribou; Souris/Cap-aux-Meules; Montreal/Cornerbrook/St. John's; and the Grand Manan ferry. The Newfoundland government receives direct subsidies for small provincial ferry services, and a similar arrangement was being made with the Quebec government. On the West Coast, the British Columbia government assumed full responsibility for provincial ferry and coastal shipping in return for an annual federal grant of \$8 million, indexed to cover rising costs.

Farther north, the Northern Transportation Co. Ltd., a Crown corporation, operates a subsidized freight service to six isolated communities in the Keewatin district.

The St. Lawrence Seaway

15.4.4

The St. Lawrence Seaway Authority, constituted as a corporation by act of Parliament in 1951, undertook the construction (and subsequent maintenance and operation) of Canadian facilities between Montreal and Lake Erie to allow navigation by vessels of 79.25 decimetres draft. At the same time, construction of similar facilities in the International Rapids section of the St. Lawrence River was undertaken by the Saint Lawrence Seaway Development Corporation of the United States. The seaway was opened to commercial traffic on April 1, 1959 and officially inaugurated on June 26, 1959. The Welland Canal is also under the seaway authority's jurisdiction for operation and maintenance.

Seaway traffic. Table 15.26 provides a summary of traffic statistics for the Montreal–Lake Ontario and Welland Canal sections of the seaway for 1978, with percentage variations from 1977.

Traffic on the Welland Canal during 1978 set a new record of 65.7 million tonnes, 0.9% higher than the record of 1977. Transits rose to 6,626 from 6,223. On the Montreal–Lake Ontario section, cargo tonnage decreased by 0.9% to 56.9 million tonnes, and transits declined from 5,516 to 5,346. Traffic revenue in 1978 was \$33.2 million on the Montreal–Lake Ontario section and \$18.3 million on the Welland Canal.

A 28.4% increase in grain shipments through the Montreal–Lake Ontario section at 27.7 million tonnes, and a 26.8% increase on the Welland Canal to 28.9 million tonnes was mainly the result of unusually heavy shipments of US grains via the seaway, due in part to capacity problems affecting alternative eastbound and southbound US transportation routes. The ability to respond quickly to sudden surges in traffic demonstrated the importance of the seaway to the North American transportation system.

In contrast to the record grain movement, there was a substantial drop in 1978 shipments of iron ore, the other main component of seaway traffic. A four-month labour strike at the Quebec–Labrador mines resulted in ore shipments decreasing by 33% from the 1977 level, to 13.5 million tonnes on the Montreal–Lake Ontario section of the seaway. The Welland Canal recorded a decline of 21.3% to 15.7 million tonnes.

Coal traffic on the Welland Canal decreased by 19.7% to 5.4 million tonnes in 1978. Lower shipments to consumer centres on Lake Ontario were caused partly by supply problems resulting from US coal strikes which began at the end of 1977.

Container traffic on the Montreal–Lake Ontario section was down 30% to 271 000 tonnes and declined 36% to 199 000 tonnes on the Welland Canal. Almost 75% of this movement was upbound, mostly to US Great Lakes ports. Remaining shipments were downbound from Canadian and US ports for export overseas.

The remaining bulk cargo, including petroleum products, remained at the same level as in 1977 on the Montreal–Lake Ontario section and increased by 5.4% to 11.8 million tonnes on the Welland Canal.

Income of the St. Lawrence Seaway Authority for the 12-month period ended March 31, 1978 amounted to \$32.1 million, made up of toll revenue of \$26.6 million

assessed for transits through the seaway locks between Montreal and Lake Erie and sundry revenues (rentals, wharfage, bridge revenue) of \$5.5 million. Total expenses (excluding depreciation, interest and write-off of future planning costs) for the 12-month period ended March 31, 1978 amounted to \$41.3 million, of which operation and maintenance expenses amounted to \$28.8 million, regional and headquarters administration expenses \$11.7 million, and employee termination benefits \$0.8 million.

15.4.5 Canadian Coast Guard

The Canadian Coast Guard forms part of Transport Canada's Canadian marine transportation administration and is headed by a commissioner. Headquarters staff in Ottawa develop policy and program standards. Operations are the responsibility of five regional offices.

The primary aim of the Canadian Coast Guard is safety at sea. To achieve this, it must ensure that: ships can navigate safely in Canadian waters, all Canadian ships and ships voyaging in Canadian waters are in seaworthy condition, and appropriate control is maintained over ships operating in Canadian waters. To achieve these goals, the coast guard has legal powers provided mainly through the Canada Shipping Act. A proposed new maritime code would cover all aspects of navigation and shipping, including ownership and registration of ships, seamen's contractual rights and conditions of service and carriage of goods.

The coast guard develops standards for the design and construction of ships, their machinery, fittings and equipment, then monitors compliance with the regulations by builders and operators. It also sets national standards for methods of loading, unloading and stowing cargo, safe working practices in ships, lifejackets and other emergency flotation devices, number, qualifications and certification of seagoing personnel, discipline on board ships, bridge-to-bridge communications between ships, and safe navigating and operating procedures. The coast guard operates the registry of ships, administers the licensing of small vessels, and protects the interests of owners of wrecked ships and their cargos.

The coast guard is responsible for minimizing pollution from ships under the Canada Shipping Act and the applicable sections of the Arctic Waters Pollution Prevention Act.

To guarantee that ships can navigate safely in Canadian waters and to enable the government to exercise adequate control, the coast guard provides aids systems which have been steadily improved, with new types of buoys, radar responders and special buoyed channels to deep-water ports.

There are 54 coast guard radio stations, linked by domestic telephone and telex lines. They provide 24-hour ship-to-shore safety and commercial communications and regularly scheduled weather and navigation information broadcasts to all vessels. In some areas, particularly busy harbours, this network is supplemented by local systems which monitor ship movement.

The coast guard fleet includes icebreakers, aids and supply vessels, search and rescue vessels, specialized vessels for ship channel maintenance, submarine cable operations and meteorological purposes, as well as fixed wing aircraft and helicopters.

On average, more than 1,700 ships a year receive icebreaker support either singly or in convoy or are routed through the ice. Since 1970, ports in the Gulf of St. Lawrence and as far inland as Montreal on the St. Lawrence River are accessible throughout the year. During summer some icebreakers take part in the annual Arctic resupply operations. The icebreakers escort a fleet of government-chartered tankers and dry cargo vessels which deliver the bulk petroleum, building supplies, food, clothing, furniture and other products needed by the residents of remote settlements and military installations.

Other coast guard vessels are assigned to specialized operations. On the East Coast, the John Cabot, a cable-laying and cable repair ship, supports transatlantic cable communications. Off the West Coast, the ships Vancouver and Quadra alternate at an ocean weather station to relay observations needed by international meteorologists. During the summer the Narwhal takes part in a hydrographic and oceanographic survey of Hudson Bay, and the icebreaker Labrador, when its other duties permit, is used in

support of other surveys in the high Arctic. The John A. Macdonald has been chartered to Dome Petroleum Co. Ltd. to provide icebreaker assistance to the company's drilling fleet in the Beaufort Sea.

Pilotage is mandatory in certain Canadian waters. The coast guard establishes national standards and maintains liaison with the Atlantic, Laurentian, Great Lakes and Pacific Pilotage Authorities, which administer the provisions of the Canada Pilotage Act and related regulations.

The coast guard is responsible for the marine element of search and rescue operations in Canada, working closely with national defence staff to ensure that the most suitable equipment reaches the scene promptly. A fleet of offshore and inshore cutters, launches, lifeboats and inflatable rescue boats is assigned solely to search and rescue work. All other coast guard vessels have a secondary search and rescue role as required.

To increase the effectiveness of search and rescue, especially for pleasure craft, the government formed the Canadian marine rescue auxiliary, organized on a regional basis, with the coast guard providing co-ordination to ensure a standard approach across the country. Experienced volunteers of the auxiliary groups perform and undertake public education programs to promote boating safety.

Other duties include marine accident investigation and responding to marine oil pollution incidents. Coast guard specialized pollution cleanup equipment valued at \$15 million is located at St. John's, Nfld.

Civil aviation

15.5

Administration and policy

15.5.1

Administration. Civil aviation in Canada is under the jurisdiction of the federal government and is administered under the authority of the Aeronautics Act and the National Transportation Act. The first part of the Aeronautics Act deals with the technical side of civil aviation, including matters of aircraft registration, licensing of personnel, establishing and maintaining airports and facilities for air navigation, air traffic control, accident investigation and the safe operation of aircraft; it is administered by the Canadian Air Transportation Administration. The second part deals with the economic aspects of commercial air services and gives the Canadian Transport Commission certain regulatory functions in commercial air services.

Federal civil aviation policy. Canada has two main line carriers, Air Canada and Canadian Pacific. Five regional carriers provide regular route operations into the North and operate local or regional routes to supplement the domestic operations of Air Canada and CP Air. Since 1969, there have been precise guidelines for the areas in which each of the five regional carriers would be permitted to supplement, or authorized to replace, main line operations.

The relative roles of Air Canada and CP Air in the domestic sphere, as defined in the transcontinental policy of 1967, were based on a formula giving Air Canada pre-eminence in transcontinental services, on the assumption that the carrier might from time to time be called on to perform special services not necessarily in its commercial best interests. In 1973 the government's international policy assigned specific areas and countries to Air Canada and CP Air which they would serve under bilateral agreements. This division was aimed at assisting the airlines in long-range planning for both passenger and cargo services. In 1979, however, the government removed all restrictions on CP Air's share of domestic air services, leaving the airline to decide on routes and destinations in which to become involved.

As of March 31, 1979, there were 21,651 aircraft registered in Canada, with 57,124 licensed pilots and 7,124 other licensed personnel. The vast majority of these aircraft are in the general aviation class and are used to train pilots, in ambulance services, for crop spraying and stock herding, and in such industries as fishing and trapping, forestry, construction, manufacturing and communications. Many are also used as third level or local carriers, offering charter and some scheduled regular services.

Because of Canada's position in aviation and its geographical location, co-operation with other nations engaged in international civil aviation is essential. Canada therefore played a major part in the establishment of the International Civil Aviation Organization (ICAO) with headquarters in Montreal. By the end of 1978, Canada had bilateral agreements with 35 other countries.

Airports. Transport Canada owns 160 airports in Canada and operates 90 of them including such major international airports as Vancouver, Calgary, Edmonton, Winnipeg, Toronto, Montreal (2), Halifax and Gander. The rest are operated by municipalities and other organizations. Municipal airports, served by scheduled air service, are eligible for an operating subsidy from the department, which also provides capital grants to help in the construction of smaller community airports.

Air traffic control. The primary functions of air traffic control are to prevent collisions between aircraft operating within controlled airspace or between aircraft and obstructions in the manoeuvring area of controlled airports, and to expedite and maintain a safe, orderly flow of air traffic. These functions are carried out by controllers in airport control towers, terminal control units and area control centres.

The airspace reservation co-ordination office in Ottawa provides reserved airspace for specified operations within controlled airspace, and information to other pilots concerning these reservations and military activity areas in controlled and uncontrolled airspace. This applies to all Canadian airspace and the Gander oceanic control area.

Telecommunications and electronics. The Canadian Air Transportation Administration (CATA) also provides telecommunications electronics and flight service to other components of the department, to other departments and agencies and to civil aviation users in Canada. The branch prepares specifications, designs telecommunications and electronics systems, and procures electronic equipment and systems employed in civil aviation in Canada, and also maintains this highly complex electronic equipment.

Flight service specialists are employed at 113 flight service (radio) stations in Canada. They are responsible for pre-flight weather briefings, flight planning, monitoring of sophisticated aids to navigation, broadcast services, and airport advisory services to aircraft. During a year, this activity involves approximately one million flight plans, 1.6 million air-ground communications and more than 1.5 million landings and take-offs of aircraft at Canadian airports that have no control towers.

Airworthiness. To comply with a 1970 CATA policy decision, the airworthiness division of civil aeronautics validates the airworthiness certification of all foreign and domestic manufactured aircraft and components before it issues a type approval or a certificate of airworthiness. It also ensures that manufacturers and repair organizations comply with Canadian airworthiness standards.

15.5.2 Commercial air services

The Canadian flag carriers operating international and domestic air routes are Air Canada, CP Air, Pacific Western Airlines and Nordair Ltd., which together in 1977 earned 76% of the total operating revenues of Canadian commercial air carriers. The five regional carriers (Eastern Provincial Airways, Nordair, Quebecair, Pacific Western Airlines and Transair) earned 14% of the total operating revenues. This includes 8% of the total operating revenues earned by Pacific Western Airlines and Nordair which are also included as flag carriers. The remaining 18% was earned by some 600 smaller airlines, many of them operating in areas of Canada which are relatively inaccessible by surface transport. On international routes, the Canadian flag carriers are authorized to provide scheduled services to Europe, the Soviet Union, Japan and Hong Kong, Mexico and South America, Panama, Morocco, the Caribbean, Australia, the United States (including Hawaii), People's Republic of China and Fiji. There are 36 foreign airlines which are authorized to operate scheduled services between Canada and other countries.

The Canadian Transport Commission (air transport committee), in its directory of Canadian commercial air services, classifies commercial air carriers in two major groups, domestic and international.

Domestic air carriers, operating wholly within Canada, are divided into seven classes. Scheduled carriers provide public transportation of persons, goods or mail to designated points according to a service schedule, at a toll per unit. Regular specific point carriers, to the extent that facilities are available, provide public transportation to points according to a service pattern, at a toll per unit. Specific point carriers provide public transportation, serving points consistent with traffic requirements and operating conditions, at a toll per unit. Charter carriers offer public transportation from a base specified in the licence, at a toll per kilometre or per hour for the charter of the entire aircraft, or at such other tolls as may be permitted by the air transport committee. Contract carriers do not offer public transportation but carry persons or goods solely under contract. Flying clubs incorporated as non-profit organizations provide flying training and recreational flying. Specialty carriers operate for purposes not provided by other classes such as aerial photography and survey, aerial distribution (crop dusting, seeding), aerial inspection, reconnaissance and advertising, aerial control (fire control, fire-fighting, fog dispersal), aerial construction and air ambulance and mercy services.

International carriers, both Canadian and foreign, operate charter commercial air services between Canada and other countries.

Canada's international flag carriers

15.5.2.1

Air Canada, a Crown corporation incorporated in 1937 as Trans-Canada Air Lines, maintains passenger, mail and commodity services over a network extending to 59 destinations in Canada, the United States, Ireland, the British Isles, Europe, Bermuda and the Caribbean. In 1978, the airline made a transition provided by the Air Canada Act 1977 which modified its capital structure, bringing its balance sheet in line with industry ratios. A portion of long-term debt was refunded and equity shares were issued.

On the basis of Air Canada's 1978 tax deducted profit of \$47.5 million, the government paid Canadians a \$13.2 million dividend.

At December 31, 1978 the airline's fleet consisted of 104 aircraft: six Boeing 747s, 10 Lockheed L-1011s, 27 DC-8s, 15 Boeing 727s and 46 DC-9s. Two L-1011s were leased for the peak summer traffic periods only.

Canadian Pacific Air Lines Ltd. (CP Air), a private airline, was established in 1942 by integrating 10 air carrier bushline companies and has since developed into a major international flag carrier. In 1978 CP Air carried 3 million revenue passengers. Operating revenues for the year reached \$466 million.

CP Air's network radiates from the company's headquarters in Vancouver to Japan, Hong Kong, the Netherlands, Hawaii, Fiji, Australia, Portugal, Spain, Italy, Greece, Israel, Mexico, Peru, Chile and Argentina. There are regular West Coast flights between Vancouver, San Francisco and Los Angeles. Within Canada CP Air's transcontinental services link Vancouver, Edmonton, Calgary, Winnipeg, Toronto, Ottawa and Montreal; the company also operates interior services in British Columbia, Alberta and Yukon. In early 1979 CP Air operated 24 aircraft: four Boeing 747s, 11 Douglas DC-8s, seven Boeing 737s and two Boeing 727s. On order in 1979 were four Douglas DC-10s (with options for two more) and three Boeing 737s (with options for one more). Service to Spain and Israel was temporarily suspended.

Regional airlines

15.5.2.2

Eastern Provincial Airways (1963) Ltd. is the regional carrier for the Atlantic provinces. In 1978 it carried 779,728 revenue passengers a total of 472 million revenue passenger-kilometres and attained 5.1 million freight tonne-kilometres. Operating revenues were \$51.6 million, 19% higher than 1977 revenues of \$43.3 million. Scheduled services were operated to Charlottetown, PEI; Moncton-Chatham-Charlo-Fredericton and Saint John, NB; Sydney and Halifax, NS; Deer Lake-Stephenville-Gander and St. John's, Nfld.; Goose Bay-Wabush (Labrador City) and Churchill Falls in Labrador; and Montreal and the Magdalen Islands in Quebec.

The company's fleet at the end of 1978 consisted of six Boeing 737s, and three Hawker-Siddeley 748s.

Nordair Ltée-Ltd., with its head office in Montreal, was established in 1957 by the merger of Mont Laurier Aviation and Boreal Airways. Since its formation Nordair has expanded steadily; it operates scheduled services in Quebec, Ontario and the Northwest Territories, as well as extensive domestic and international charter flights throughout Canada and from Eastern Canada to the southern United States, the Caribbean and since 1977 Mexico.

Scheduled services operate between Montreal, Ottawa, Toronto, Sault Ste Marie, Thunder Bay, Dryden, Winnipeg, Hamilton, Windsor and Pittsburgh. Other scheduled services are operated between Montreal, Val-d'Or, Fort George, Matagami, La Grande, Chibougamau, Great Whale River, Asbestos Hill and Fort Chimo, Que. and Frobisher Bay, Nanisivik, Hall Beach and Resolute Bay, NWT. In 1977 Nordair carried more than 590,000 passengers and in 1978 more than 613,000.

Nordair's charter flights accommodate inclusive tour travel and group travel. Under contract with the United States Air Force, Nordair provides air services between the DEW-line sites along the Arctic Coast and, under contract with the federal supply and services department, operates ice reconnaissance services for the federal environment department. In 1978 Nordair's fleet was composed of two Douglas DC-8s, eight Boeing 737s, two Lockheed L-188s, and three Fairchild F-227s. Two Boeing 737s were delivered in 1979.

Pacific Western Airlines Ltd., with executive offices in Calgary, operates scheduled passenger and cargo services over 22 531 unduplicated route-kilometres in Western and northwestern Canada. Main line scheduled services operate from Vancouver to Victoria, Comox, Powell River, Campbell River, Port Hardy and Sandspit on the Pacific Coast. Service is also provided between Vancouver and Seattle. In the interior and northern region of BC, flights are scheduled from Vancouver to Penticton, Kelowna, Cranbrook, Castlegar and Kamloops through to Calgary and Edmonton, Alta.; in the northern interior, service is provided from Vancouver to Smithers, Dawson Creek, Williams Lake, Quesnel and Prince George. From Edmonton, scheduled flights operate to Cambridge Bay, Fort Simpson, Fort Smith, Hay River, Inuvik, Norman Wells, Resolute and Yellowknife in the Northwest Territories and to Fort Chipewyan, Fort McMurray, High Level and Peace River, Alta. and Uranium City, Sask. A no-reservations AirBus service operates between Calgary and Edmonton.

In 1978 there were 3 million passengers carried. The company's fleet of 19 aircraft includes one Boeing 727, 14 Boeing 737s, one Boeing 707 and three Lockheed Hercules freighters (cargo only).

Quebecair, with its head office at Montreal International Airport, Dorval, offers scheduled services in Quebec and Labrador. The company was founded in 1946 under the name Le Syndicat d'Aviation de Rimouski. The name was changed to Rimouski Airlines in 1947 and to Quebecair in 1953 when it was amalgamated with Gulf Aviation. During 1965 Quebecair acquired Northern Wings Ltd. and Northern Wings Helicopters, in 1967 A. Fecteau Transport Ltée and in 1974 Air Gaspé Inc.

Quebecair operates scheduled services and the subsidiaries handle flights by light aircraft, charter and contract services. Scheduled services are operated over 9 656 km serving a number of localities in nine economic regions of Quebec and Labrador. Points linked are Montreal, Quebec City, La Malbaie (Charlevoix), Baie-Comeau (Hauterive), Gagnon, Wabush (Labrador City), Mingan, Mont-Joli-Rimouski, Saguenay (Bagotville), Schefferville, Sept-Îles, La Grande 2 (James Bay), Gaspé, Îles-de-la-Madeleine, Rouyn-Noranda, Bonaventure, Charlo, Roberval, Port Meunier, Ste-Anne-des-Monts, Senneterre, Val-d'Or, Chibougamau, Matagami, Blanc Sablon, Saint-Paul, Old Fort Bay, Saint-Augustin, La Tabatière, Tête à la Baleine, Chevery, Gethsemani, Kégaska, Natashquan, Aguanish, Baie Johan Beetz and Mingan-Havre-Saint-Pierre. Quebecair also operates group charters within Canada and to the US, Caribbean, Bermuda, Mexico, South America and Europe using jet aircraft.

Revenue passengers transported by Quebecair in 1978 numbered 750,000 on scheduled services and 300,000 on international charter services.

Quebecair's large and varied fleet of aircraft enables it to meet the diverse requirements of today's charter market. The combined fleet of Quebecair and its

subsidiaries totals 43 units: two Boeing 707s, one Boeing 727, four Boeing 737s, two Fairchild F-27 turbo-props, two Douglas DC-3s, 11 DHC-3 Otters, one Cessna 180, 13 DHC-2 Beavers, three Cessna 185s, three Beechcraft 99s and one Hawker-Siddeley 748.

Transair Ltd. This company was originally organized in 1947 as Central Northern Airways. In 1956 with the merger of Central Northern and Arctic Wings, Transair Ltd. was formed. In 1969 Midwest Airlines which operates the helicopter division became a subsidiary of Transair.

Transair operates scheduled services throughout Manitoba, Saskatchewan, Alberta, the Northwest Territories and Yukon. With Pacific Western Airlines connections, over 50 destinations are served. The Transair fleet consists of three Boeing 737s and two YS-11s. Midwest Airlines operates a total of 12 helicopters.

Commonwealth and foreign scheduled commercial air services

15.5.2.3

At the end of 1979 there were 37 foreign air carriers holding valid Canadian operating certificates and licences issued for international scheduled commercial air services into and out of Canada: Aeroflot (USSR), Aerolineas Argentinas, Aeronaves de Mexico S.A., Air France, Air Jamaica Ltd., Alitalia-Linee Aeree Italiane, American Airlines Inc., British Airways, Czechoslovak Airlines, Delta Airlines Inc., Eastern Air Lines, El Al Israel Airlines Ltd., Empresa-Consolidada Cubana de Aviacion, Finnair, Frontier Airlines Inc., Hughes Air West (a division of Hughes Air Corporation), Iberia Air Lines of Spain, Irish International Airlines, Japan Air Lines Co. Ltd., KLM Royal Dutch Airlines, Lot Polish Airlines, Lufthansa German Airlines, North Central Airlines Inc., Northwest Airlines Inc., Olympic Airways S.A., Qantas Airways Limited, Royal Air Maroc, Sabena Belgian World Airlines, Scandinavian Airlines System, Seaboard World Airlines Inc., Swissair, Transportes Aereos Portugueses S.A.R.L., Trinidad and Tobago (BWIA International) Airways, United Air Lines Inc., US Air, Western Air Lines Inc. and Wien Air Alaska Inc.

Civil aviation statistics

15.5.3

Airport activity. Air traffic activity continued to grow in 1978. The 60 major airports reported over 6.8 million aircraft movements (landings and take-offs). This represented an increase of 2.1% over 1977, a growth of 20.5% since 1974 and 56.8% since 1970. The 140 smaller airports without control tower facilities, which reported daily traffic counts, registered 2.2 million movements.

Toronto International airport continued to lead in the number of itinerant movements with 249,237, followed by Vancouver International with 246,740 and Montreal International (Dorval) with 176,383. Traffic at these three airports accounted for 19.7% of the total itinerant traffic reported by the 60 airports with Transport Canada control towers. Light aircraft weighing under 1 814 kilograms accounted for 54.8% of these itinerant movements. Larger aircraft, such as the Boeing 747, DC-8 and DC-10, accounted for 126,349 movements or 3.7%. Piston engine aircraft contributed 61.8%, jet aircraft 23.6%, and turbo props, helicopters and gliders the remainder.

In 1978 there were 309,742 international movements recorded at airports with control tower facilities, up 5.9% from the 1977 total of 292,441. The 1978 total included 261,605 transborder movements (to and from the United States) and 48,137 other international movements.

Domestic charter movements by aircraft carriers, as reported by all stations with air traffic control towers, rose by 14.4% from 30,978 in 1977 to 35,427 in 1978. Charter transborder movements were up 11% to 13,295 from 11,978. Charter movements to and from other international points were up only 447 from the 14,044 movements registered in 1977.

The busiest airport in Canada in 1978 in total air traffic activity was Saint-Hubert, Que., near Montreal, with 294,155 movements, 192,107 of them local, related to pilot training or recreational flying.

Commercial air services. Tables 15.28 and 15.29 provide statistics on commercial air services of Canadian airlines with gross annual flying revenues exceeding \$150,000 and

of scheduled foreign airlines. The data for Canadian airlines refer to both domestic and international operations. Figures for the scheduled foreign airlines pertain only to the hours and distance flown over Canadian territory, excluding passengers and goods in transit through Canada. Table 15.29 contains comparative data for domestic and international traffic in 1976 and 1977.

15.6 Urban transportation

Almost 60% of all transportation activity in Canada is in urban areas, where 75% of the population lives. About 80% of all urban travel is by private automobile. Adverse public reaction to further road building and concern over energy, air pollution and congestion generated by private cars led to new emphasis on public transit, including buses, subways and streetcars.

Although provincial and municipal governments have prime responsibility for urban transportation, the federal government has taken some initiatives in the urban transit field. Transport Canada, in an urban research program to develop improvements to traffic management and public transport, has demonstrated dial-a-bus, automatic vehicle monitoring equipment for buses, and advanced traffic signal systems. A federal Urban Transportation Assistance Program (UTAP) provides the provinces with funds but does not specify their use. To date, projects selected by the provinces are grade separations, bus and equipment purchases, provision of bus shelters, bus maintenance, garages and transportation planning projects.

Demand for adequate transport facilities in urban areas has placed a heavy financial burden on municipalities. Formerly, provincial cost-sharing programs which assisted in meeting the capital and operating costs of transportation systems in urban areas were strongly oriented to freeways and roads. Several provinces are now shifting the emphasis from highway construction toward transit planning and construction.

Newfoundland does not have a program related to urban transportation problems but has improved access to, from and across St. John's. The St. John's harbour arterial road was completed in 1979 and work on a cross-town arterial road, started in 1977, is continuing. The city is served by a bus system subsidized by the provincial government at \$4 per capita of the city population. The province has signed an agreement with the federal government related to future urban transportation requirements.

Nova Scotia. A number of long-term improvements in urban transportation, effective in 1979, resulted from local initiatives and government assistance. Regional transit agencies have been established in the three major urban areas: Halifax-Dartmouth, Sydney-industrial Cape Breton and New Glasgow-Pictou County. Improvements in transit fleets and services are expected over the next few years. Halifax-Dartmouth has experienced major progress in public transportation through launching improved cross-harbour passenger ferries, starting construction on a \$7 million bus maintenance facility and introducing transit service to the suburban growth area of Bedford-Sackville.

Provincially the existing transit assistance policy was expanded in 1979 to improve public transit to assist disabled persons. Such services, using wheelchair vans primarily, are available in Sydney and Truro.

New Brunswick. The NB six cities public transit study, completed in 1976 for Saint John, Moncton, Fredericton, Bathurst, Edmundston and Campbellton, was used as a basis for discussion with the six cities when the federal urban transportation assistance program was announced in 1978. The federal program contributes up to 80% of approved capital projects, the province another 10% and the cities contribute the remainder. Under this capital program it was expected nearly \$6 million would be allocated to improve transit services in Saint John, Moncton and Fredericton prior to April 1, 1983.

Quebec is developing an integrated public transit policy. In a program to encourage public transit as an alternative to individual transportation, the Quebec transport department pays the full cost of studies on setting up or improving public transit systems, and subsidizes 30% of acquisition costs to transit corporations for buses

manufactured in Quebec. To obtain these on the best possible terms the transit commissions, with the assistance of the transport department, consolidated the purchase of 1,200 buses to be delivered over four years. The department also subsidizes operating deficits of public transit systems at rates of 45% to 55% depending on the utilization rate of each system. In medium-density areas where the quality of service must be upgraded, municipal or intermunicipal corporations may be set up. Where such a transit corporation takes over a system, the Quebec transport department may pay up to 33% of takeover costs.

On this basis government subsidies, which totalled \$86.3 million in 1977-78, reached \$116.6 million in 1978-79 including \$1 million for transportation of the handicapped. To increase the viability of urban transit, the government promoted the integration of school buses into the public transit system of more than 40 municipalities. Five transit commissions in Quebec received most of the government assistance including the Montreal urban community transit commission, the Quebec urban community transit commission, the Laval transit commission, the Outaouais regional transportation commission and the Montreal South Shore transit commission. Together they serve nearly 3 million people. The Montreal transit authority received \$36.6 million in grants against the deficit in 1978-79, and \$1.7 million for the purchase of buses. In addition, the transport department granted \$47.3 million to the Montreal urban community toward repayment of the debt incurred for the subway system.

All transit commissions have revised their routes and effected various improvements such as reserved bus lanes and high-speed routes (Quebec), off-road loading bays and express services (Outaouais) and métrobuses (Montreal). They continued installing bus-passenger shelters and introduced reduced rates for senior citizens. All commissions publish route timetables and Quebec and Laval introduced a monthly pass system for regular passengers.

The Quebec urban community completed a study into standardizing services, and continued a study on the distribution of drivers and vehicles.

The department and the transit authorities of Montreal, Laval and the South Shore, working together on the Montreal transportation committee, made recommendations for development of a transportation policy for the entire Montreal metropolitan area. This policy is aimed at co-ordinating all transit systems and integrating plans for the Montreal area: the projected express system to serve Mirabel and other parts of the metropolis (REM), train service linking the suburbs with the downtown core, now provided by both CN and CP, future extensions of the subway, and transportation on the South Shore. The committee report sets out various methods of retaining the diverse clientele of the transit commissions and of encouraging the use of public transit rather than private cars. In 1978, the government established a Montreal area transit council, le Conseil des transports de la région de Montréal (COTREM) to implement these recommendations.

Ontario. A provincial government urban transportation subsidy program encourages the upgrading and use of public transit in cities and towns. It provides special assistance to major new transit services to offset the usual low ridership during the first years of operation. A total of 60 Ontario municipalities now provide their residents with alternatives to private car, through substantial increases in provincial funding available under the municipal transit subsidy program. In addition, funds were invested in a commuter program in the metropolitan Toronto region.

The Toronto Area Transit Operating Authority (TATOA) provides a transit system which crosses regional boundaries of metropolitan Toronto and adjacent municipalities. The GO system of trains and buses carries more than 60,000 commuters a day. The original GO train, operated for TATOA by Canadian National Railways, has been providing commuter service at capacity along Toronto's Lakeshore route. To provide extra capacity to satisfy rush hour demand, 80 specially designed double-decker coaches were placed in service in 1978 making existing equipment available for service on a new Richmond Hill line which officially opened in April 1978.

The Urban Transportation Development Corporation (UTDC) was established to act as a catalyst in the Ontario urban transportation industry. Its mandate is to design,

develop and market new transit systems and equipment and to stimulate the commercial application of this technology. UTDC has several projects under way. These projects will benefit both the transit manufacturing industry and Ontario municipalities. In September 1978, UTDC's new transit research centre at Kingston was officially opened. Fully equipped with an advanced technology testing track, laboratory facilities and engineering offices, it is available to any component or system designer or supplier, any manager, transit operator or maintenance supervisor requiring a facility to test a new product or technique. It can also serve as a facility to train new employees in the use of transportation equipment.

A new Canadian light rail vehicle (CLRV) which is energy efficient, quiet, and capable of moving more passengers at less expense has been developed by UTDC. The Toronto Transit Commission purchased 200 CLRVs to replace part of the city's streetcar

There are more than 880 000 km of highways, roads and streets in Canada but more than half of all surface transportation activity is concentrated in and around urban areas. About 9.6 million passenger cars are in use and about 80% of urban transportation is by private car. Concern over energy, air pollution and congestion has led to new emphasis on public transit systems.

fleet. Ontario and Quebec entered into a joint program to finance and develop a higher-capacity version of the vehicle. UTDC expected to undertake the design, construction and testing of at least one prototype light-rail vehicle at the test centre in Kingston. Another UTDC development is an intermediate capacity transit system (ICTS) and its component sub-systems. The ICTS features small, quiet, rapid-transit trains which operate on a separate guideway.

A major concern in transportation is the provision of transit services for the elderly and handicapped. The ministry of transportation and communications has co-operated with Metro Toronto, Ottawa-Carleton, Sault Ste Marie, Peterborough and Chatham in experiments using specialized mini-buses, vans and passenger cars for individuals physically unable to board conventional transit systems. A new provincial program helps municipalities financially to provide these specialized services, geared to local demand. The services may be operated by the municipalities or contracted out on their behalf.

Manitoba. In the fiscal year 1978-79 the province provided about \$564,800 for its innovative transit programs in Winnipeg, including a dial-a-bus system in the southern part of the city, a downtown shuttle service (DASH) operating during business hours and suburban feeder services in several areas. Also included was \$257,750 for a Handi-Transit system for disabled persons in its second year of operation. The system operates on regularly-established routes and also makes casual pickups of disabled persons whenever possible.

Through the highways department, the province provided direct operating grants of \$8.69 million to Winnipeg, \$292,264 to Brandon, \$50,859 to Thompson and \$40,250 to Flin Flon to help cover transit operating deficits. It also provided \$110,746 to Brandon to assist in transit bus purchases.

Saskatchewan. The highways and transportation department provides urban governments with technical and financial assistance to improve and expand transportation services through transportation studies, building roadways, upgrading regular transit services, and providing special transportation services for handicapped people. In the last six years the department has provided over \$10 million for transit services and has paid 50% of the cost of 125 new transit buses in Regina, Saskatoon, Moose Jaw and Prince Albert. A transit subsidy of three cents a passenger has been paid for city transit bus riders. The department also pays 75% of the building cost for passenger shelters. To help cities expand and improve city streets, more than \$30 million has been provided during the past six years.

A major thrust was taken to improve transportation for handicapped people in Regina, Saskatoon, Estevan, Yorkton, Swift Current, Prince Albert, Rosetown, Moose Jaw and Wynyard. The department pays 75% of the cost to buy special buses and 50% of the operating deficit. Operations are managed by local officials.

A telebus service in Regina offers door-to-door service within individual zones and door-to-connection with scheduled line service for trips between zones. Recently, the department was involved in a cost-share program with the federal government, the town of Battleford, and the city of North Battleford, to integrate a shared taxi system with a fixed bus line system. This two-year demonstration project could have far reaching implications for other smaller Saskatchewan centres. The shared taxi system is more flexible than a conventional bus system and more economical than only a shared taxi service. Special vehicles will also provide convenient services for handicapped people.

In 1978-79, a rural transit assistance program was established to allow small rural communities to plan and manage local transportation services to regional centres or to established bus routes. The program is aimed at communities with a population of 200 or more, but smaller communities will be eligible for service if they are on a proposed route. Three projects were operating in 1979 and 41 communities are eligible; 19 others with population under 200 are on proposed routes.

Two categories of public bus services operate in Saskatchewan. One is the scheduled bus service operated on a self-financing basis by major carriers. The other is scheduled service for small communities managed by local community officials and supported by the provincial government; financial support includes payment of the total deficit incurred by the operations. When the service reaches full extent, about 20,000 Saskatchewan residents will have public bus transportation for the first time.

Alberta. In 1974 Alberta announced an urban transportation assistance policy with \$400 million committed to cities for urban roadway and public transit research, planning and development over a six-year period. Programs included: research and development, transit capital assistance, transit operating deficit subsidies, arterial roadways capital assistance, major continuous roadway corridors and rail relocation studies.

Rapid economic growth in Alberta cities necessitated a review of the original program. In January 1979, the province announced a new program package with about \$750 million in urban transportation assistance committed to the cities for a six-year period which began in April 1979.

The 10-point program included: \$9 million for transit and roadway research and development projects, including demonstration projects; \$16 million for transportation system management projects intended to make full use of roadways; \$250 million in public transit capital assistance; \$207 million in arterial roadway capital assistance; \$150 million for the continued construction of one major continuous roadway corridor in each city; \$45 million for railway and highway separation structures; \$63 million on a per capita basis to the cities toward the operation of transportation services for senior citizens, disabled and handicapped persons; and \$12 million toward maintaining primary provincial highway routes in cities. Three short-term projects involve rail relocation, urban highway and street route signs, and the equitable distribution of federal urban transportation assistance to the province for rail relocation and railway and highway separation structures.

The basic objective of the new urban transportation assistance package is to improve the quality of life in the cities by reducing traffic problems. The programs are intended to facilitate and improve the provincial transportation system in the cities to service and interconnect with the provincial highway system. The level of assistance of the 10 programs is to be reviewed with the cities every two years to ensure that the programs meet the province's urban transportation objectives.

British Columbia. Administration of public transit services was reorganized in 1978-79 through the creation of the Urban Transit Authority, a Crown corporation, to ensure a uniform provincial policy for planning and funding urban transit programs. The authority provides financial, policy and planning direction, and assists local governments throughout the province through agreements covering provision of services. A financial agreement is made annually to cost-share these services with the local governments.

The transit authority initiated a cost-sharing program in 13 of the smaller BC communities in April 1979. Of the total \$7.3 million operating cost of these transit systems, the authority's contribution to the deficit was expected to be \$3.9 million. Full implementation of the program was expected in April 1980 when transit systems in the metropolitan regions of Vancouver and Victoria would become part of the authority's responsibility.

Expected total operating cost for 1980-81 was projected at \$139 million, with the authority's contribution being about \$68 million of the expected deficit.

The provincial government established the Metro Transit Operating Co., another Crown corporation, in 1979 to be responsible for operating transit services in the metropolitan regions of Vancouver and Victoria under contract to the regional districts and the authority. The new company would assume these responsibilities from the transit division of BC Hydro. The transfer of assets and management of transit operations was planned to take place in April 1980 along with the introduction of local cost-sharing and operating benefits.

The Urban Transit Authority is also responsible for transit research and demonstration projects and for development of a custom transit service program for the handicapped. Cost-sharing agreements were approved in 1979-80 for research studies dealing with rapid transit, para-transit including small buses and shared taxis, and conventional bus systems feasibility in smaller communities. Policy issues on rapid transit, transit for the handicapped and vehicle replacement programs are being addressed by the board of directors.

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- 15.3.3 Transportation and Communications Division, Economic Statistics Field, Statistics Canada.
- 15.4 - 15.4.1 Transportation and Communications Division, Economic Statistics Field, Statistics Canada; Public Affairs, Transport Canada.
- 15.4.2 Public Affairs, Transport Canada; National Harbours Board.
- 15.4.3 Public Affairs, Transport Canada.
- 15.4.4 The St. Lawrence Seaway Authority.
- 15.4.5 - 15.5.1 Public Affairs, Transport Canada.
- 15.5.2 Canadian Transport Commission and the respective airlines.
- 15.5.3 Transportation and Communications Division, Economic Statistics Field, Statistics Canada.
- 15.6 Public Affairs, Transport Canada and the respective provincial governments.

Tables

...	not available	e	estimate
...	not appropriate or not applicable	p	preliminary
—	nil or zero	r	revised
—	too small to be expressed	certain tables may not add due to rounding	

15.1 Net subsidies paid for maintenance of coastal and inland shipping services, 1976-77 and contract subsidies 1977-78 (dollars)

Service	Net subsidy ¹ 1976-77	Contract subsidy ² 1977-78
WEST COAST		
Gold River—Zeballos, BC	107,000	
Vancouver—northern BC ports	2,018,413	
Vancouver Island—Ahousat freight service	73,200	{ 8,000,000 ³
Vancouver Island—Kyuquot freight service	83,846	
Central BC coast—Coast Ferries Ltd.	195,598	
EAST COAST		
St. Barbe, Nfld.—Blanc-Sablon, Que.	214,941	525,000
Burnside—St. Brendan's, Nfld.	82,475	82,475
Carmanville—Fogo Island, Nfld.	173,081	173,081
Cobb's Arm—Change Islands, Nfld.	86,100	86,100
Grand Manan and the mainland, NB	259,000	259,000
Greenspond—Badger's Quay, Nfld.	55,750	37,580
Montreal—Quebec—Rimouski—north shore ports, Que.	2,102,586	2,079,500
Grindstone (Îles-de-la-Madeleine), Que.—Souris, PEI	1,188,282	1,188,276
Peelee Island and the mainland, Ont.	142,265	158,041
Portugal Cove—Bell Island, Nfld.	993,107	916,705
Wood Islands, PEI—Caribou, NS	3,601,951	3,750,000
Montreal, Que.—Corner Brook—St. John's, Nfld.	3,675,893	3,780,963
Little Bay Islands—St. Patrick, Nfld.	209,886	215,000
Total	15,163,274	21,251,721

¹Net amount paid after recapture.

²Negotiated amount subject to recapture.

³Federal/provincial agreement.

15.2 Railway track kilometres operated, 1900-77

First main ¹ track Year	Area and type of track	1973	1974	1975	1976	1977
<i>km</i>						
1900	28 416	First main				
1905	32 971	Newfoundland	1 519	1 519	1 493	1 473
1910	39 801	Prince Edward Island	409	409	409	408
1915	56 137	Nova Scotia	2 007	2 007	2 010	1 968
1920	62 451	New Brunswick	2 680	2 680	2 678	2 641
1925	64 937	Quebec	8 705	8 705	8 687	8 570
1930	67 668	Ontario	15 894	15 847	15 789	15 732
1935	69 067	Manitoba	7 633	7 398	7 397	7 363
1940	68 502	Saskatchewan	13 784	13 778	13 668	13 518
1945	68 159	Alberta	10 021	9 915	9 788	9 670
1950 ²	69 168	British Columbia	7 686	7 702	7 702	7 686
1955	69 916	Yukon Territory	93	93	93	93
1960	70 858	Northwest Territories	208	208	208	208
1965	69 454	United States	546	637	637	637
1970	70 784					
1971	71 057	Total, first main	71 185	71 239	70 715	69 967
1972	70 851					
1973	71 185	All other	25 772	25 719	25 917	25 020
1974	71 239					
1975	70 716					
1976	70 471					
1977	69 967	Total	96 957	96 958	96 632	94 987

¹Defined as a single track extending the entire distance between terminals, upon which the length of the road is based.

²Newfoundland included from 1950.

15.3 Railway rolling-stock in service as at Dec. 31, 1976 and 1977

Type	1976	1977	Type	1976	1977
Locomotives	4,008	4,035	Freight cars	193,401	187,183
Steam	—	—	Automobile	3,541	3,411
Diesel-electric	3,994	4,021	Ballast	2,670	2,652
Electric	14	14	Box	88,644	83,478
Passenger cars	1,855	1,753	Flat	26,305	25,081
Turbo train	—	—	Gondola	21,377	20,291
Power unit cars	6	6	Hopper	31,801	33,387
Coach	15	15	Ore	8,236	8,661
Parlour	6	6	Refrigerator	4,898	4,685
Self-propelled cars	116	116	Stock	2,093	1,924
Coach	737	733	Tank	325	324
Combination	35	31	Other	3,511	3,289
Dining	80	75	Privately owned cars	25,446	27,730
Parlour	118	116	Tank	14,233	14,107
Sleeping	306	291	Other	11,213	13,623
Baggage, postal and express	431	359			
Other	5	5			

15.4 Commodities¹ hauled as revenue freight by railways, 1976 and 1977 (thousand tonnes)

Commodity	1976	1977	Commodity	1976	1977
LIVE ANIMALS	139	93	Gypsum	3 665	4 359
Cattle	130	87	Limestone	3 691	3 507
Other live animals	9	6	Other crude non-metallic minerals	12 281	12 754
			Waste materials	789	730
FOOD, FEED, BEVERAGES AND TOBACCO	30 634	32 514	FABRICATED MATERIALS, INEDIBLE	60 893	64 263
Meat, fresh or frozen	247	212	Lumber	7 183	8 146
Other animal products	207	171	Other wood fabricated materials	2 184	2 008
Barley	5 926	4 163	Wood pulp and other pulp	5 096	5 316
Wheat	14 063	17 924	Newsprint	4 248	4 075
Other grains	2 404	2 163	Other paper and paperboard	3 083	3 074
Milled cereals and cereal products	1 880	1 988	Chemicals	5 614	6 376
Fruits and fruit preparations	627	639	Potash	7 864	8 719
Vegetables and vegetable preparations	1 254	1 175	Other fertilizers	1 797	2 401
Sugar	383	379	Petroleum and coal products	12 171	12 432
Other food and food preparations	794	775	Metals and primary metal products	5 637	5 403
Animal feed	2 424	2 532	Cement	1 836	1 931
Beverages	383	349	Other fabricated materials	4 180	4 382
Tobacco and tobacco products	42	44			
CRUDE MATERIALS, INEDIBLE	125 310	129 109	END PRODUCTS, INEDIBLE	10 024	9 246
Crude animal and vegetable materials	1 617	2 003	Road motor vehicles and parts	6 149	5 843
Pulpwood (logs and chips)	10 723	10 390	Other end products	3 875	3 403
Other crude wood materials	1 991	2 563			
Textile fibres	87	97	SPECIAL TYPES OF TRAFFIC	10 789	10 983
Iron ore	57 838	57 288	Piggyback (trailers and containers)*	6 641	7 156
Nickel-copper ore	4 912	5 214	Freight forwarder	1 810	1 680
Bauxite ore and alumina	1 139	2 585	Other special traffic	2 338	2 147
Other metallic ores	6 589	6 396			
Scrap metal, slags and drosses	1 995	1 644	NON-CARLOAD SHIPMENTS*	1 005	1 037
Coal	17 645	19 277	Total	238 794	247 247
Crude oil and bituminous substances	348	302			

¹In this table duplications are eliminated, for example, freight that is interlined between two or more Canadian railways is counted only once. The statistics do not cover United States operations of Canadian railways except for the Canadian Pacific Railway line through Maine, US, and certain other short mileages which are deemed to be an integral part of the Canadian railway system. Sections of United States railways operating into Canada are regarded as Canadian railways and are included. Freight carried by the Cartier Railway is included in this table; however, financial data for this railway are not available for inclusion in the financial tables.

*Excludes traffic moved in railway-operated containers and trailers.

²Includes express-rated traffic.

15.5 Capital invested in railway road and equipment property, 1973-77 (thousand dollars)

Investment	1973	1974	1975	1976	1977
Road	203,405	284,628	359,926	345,736	274,877
Equipment	30,571	77,321	174,650	117,932	28,179
General	8,426	5,789	Cr. 6,983	10,728	Cr. 8,444
Undistributed ¹	49,250	Cr. 13,755	29,890	14,879	12,898
CNR non-rail property	14,989	20,363	18,595	19,312	3,214
CPR	27,003	Cr. 46,929	Cr. 1,459	Cr. 21,596	Cr. 1,323
Other	7,258	12,811	12,754	17,163	11,006
Total	291,652	353,983	557,483	489,275	307,510
Cumulative investment to Dec. 31	{ 8,877,629 8,848,751 ² }		9,202,734	9,760,217	10,249,492
				10,249,492	10,557,000

¹Credit entries in this table result when the annual "write-offs" are greater than the annual investment in any category.

²Revised to reflect restatement of data by two railways.

15.6 Capital structure of the Canadian National Railway System as at Dec. 31, 1973-77 (thousand dollars)

Year	Shareholders' capital		Funded debt held by public		Government loans and appropriations—active assets in public accounts	Total
	Government of Canada share-holders' account	Capital stock held by public	Guaranteed by federal and provincial governments	Other		
1973	2,023,540	4,345	803,474	2,024	1,088,898	3,922,281
1974	2,162,550	4,345	596,229	2,024	1,292,574	4,057,722
1975	2,224,606	4,345	582,888	2,024	1,438,071	4,251,934
1976	1,496,789	4,345	657,055	2,024	1,405,142	3,565,355
1977	1,598,798	4,345	744,566	2,024	1,453,968	3,803,700

15.7 Total operating revenues, operating expenses, net revenue, fixed charges and deficits of the Canadian National Railway System (Canadian and United States operations), 1973-77 (thousand dollars)

Year	Total operating revenue	Total operating expenses	Income before fixed charges	Total fixed charges	Net income or deficit	Cash deficit or surplus ¹
1973	1,482,507	1,440,001	76,168	96,240	Dr. 20,072	Dr. 21,324
1974	1,817,106	1,782,456	86,990	124,016	" 37,025	" 37,733
1975	1,916,778	1,986,426	Dr. 22,046	138,535	" 160,581	" 16,368
1976	2,274,396	2,151,548	165,740	153,983	Cr. 11,757	Cr. 11,764
1977	2,466,361	2,313,553	209,411	178,655	" 30,756	" 28,018

¹Contributed by or paid to the Government of Canada.

15.8 Railway operating revenues and expenses (Canadian operations), 1972-77

Item and year	Total revenues \$'000	Total expenses (before fixed charges) \$'000	Ratio of expenses to revenues %	Per km of first main track		Net revenues \$	Freight revenue per freight-train km \$
				Revenues \$	Expenses \$		
All railways							
1972	1,940,594	1,842,575	93.24	27,389	26,006	1,383	15.74
1973	2,122,988	2,032,984	93.84	29,823	28,559	1,264	17.46
1974	2,568,994	2,512,922	96.24	36,062	35,275	787	19.33 ^r
1975	2,733,811	2,801,967	101.31	38,659	39,623	Dr. 964	20.59
1976	3,192,485	3,075,928	94.67	45,302	43,648	1,654	24.15 ^r
1977	3,538,093	3,349,044	92.97	50,568	47,866	2,702	27.02
CNR							
1972	1,017,510	988,813	97.13	27,100	26,336	764	15.98
1973	1,118,767	1,096,184	97.98	29,796	29,195	601	18.27
1974	1,385,730	1,371,929	99.00	36,946	36,578	368	20.67
1975	1,462,646	1,555,308	106.34	39,201	41,685	Dr. 2,484	22.43
1976	1,739,033	1,682,953	96.78	46,798	45,289	1,509	22.64
1977	1,905,347	1,795,062	94.21	51,407	48,431	2,976	25.71
CPR							
1972	711,168	653,184	87.55	27,462	25,223	2,239	15.91
1973	772,859	711,316	87.57	29,853	27,476	2,377	16.17
1974	935,179	867,495	88.53	35,996	33,391	2,605	17.71
1975	1,007,306	940,306	90.20	39,192	36,585	2,607	21.79
1976	1,148,746	1,060,896	87.90	44,810	41,383	3,427	25.96
1977	1,274,035	1,179,242	88.08	50,471	46,716	3,755	27.92

15.9 Road and street kilometres classified by type and by province as at Dec. 31, 1975 and 1976

Year, province or territory and jurisdiction	Surfaced				Earth	Total
	Rigid pavement	Flexible pavement	Gravel	Other		
1975						
FEDERAL AND PROVINCIAL JURISDICTION	3 196	127 597	144 394	97	26 741	302 024
Newfoundland	—	4 234	5 909	—	13	10 156
Prince Edward Island	19	3 151	1 226	—	925	5 322
Nova Scotia	10	9 424	16 957	—	6	26 398
New Brunswick	—	9 771	10 511	—	2	20 284
Quebec	906	31 958	30 795	—	8 153	71 814
Ontario	1 665	17 762	9 004	62	211	28 704
Manitoba	570	8 410	11 548	—	171	20 698
Saskatchewan	—	15 750	7 521	—	2 544	25 814
Alberta	3	10 338	22 437	—	5 768	38 547
British Columbia	24	16 677	22 592	32	8 863	48 187
Yukon and Northwest Territories	—	120	5 893	—	85	6 099
MUNICIPAL JURISDICTION	10 308	99 274	314 372	531	145 512	569 997
Newfoundland	13	1 320	1 415	—	154	2 902
Prince Edward Island	16	1 58	—	—	13	187
Nova Scotia	97	1 621	259	—	5	1 981
New Brunswick	35	1 888	483	—	101	2 607
Quebec	2 704	19 803	14 787	179	3 096	40 568
Ontario	4 315	43 180	75 655	256	4 981	128 387
Manitoba	2 005	1 204	38 825	18	18 105	60 157
Saskatchewan	291	3 495	92 540	60	82 361	178 748
Alberta	571	14 351	86 579	6	36 458	137 966
British Columbia	261	12 047	3 681	13	225	16 227
Yukon and Northwest Territories	—	108	148	—	12	267
1976						
FEDERAL AND PROVINCIAL JURISDICTION	3 050	130 744	148 993	180	25 695	308 662
Newfoundland	—	4 641	5 586	—	14	10 242
Prince Edward Island	24	3 243	1 157	—	914	5 339
Nova Scotia	8	9 537	16 962	—	—	26 508
New Brunswick	—	9 771	10 511	—	2	20 284
Quebec	732	32 652	31 741	2	8 153	73 280
Ontario	1 682	17 754	11 764	179	1 075	32 455
Manitoba	584	8 580	11 552	—	161	20 877
Saskatchewan	—	16 551	7 093	—	2 623	26 266
Alberta	3	10 420	23 063	—	4 926	38 413
British Columbia	16	17 475	23 567	—	7 741	48 799
Yukon and Northwest Territories	—	120	5 995	—	85	6 203
MUNICIPAL JURISDICTION	9 099	107 130	313 302	438	145 641	575 611
Newfoundland	10	1 363	1 332	—	257	2 963
Prince Edward Island	14	212	—	6	11	245
Nova Scotia	116	1 620	243	—	3	1 983
New Brunswick	21	2 118	452	8	76	2 675
Quebec	1 332	21 952	13 918	180	3 185	40 567
Ontario	3 771	45 139	74 155	124	5 010	128 199
Manitoba	2 628	1 375	38 785	8	17 725	60 521
Saskatchewan	296	3 970	96 770	5	78 834	179 925
Alberta	692	16 785	83 992	19	40 245	141 733
British Columbia	219	12 490	3 487	37	288	16 521
Yukon and Northwest Territories	—	107	168	—	7	280

15.10 Construction, maintenance and administration expenditure on roads and streets, by province, years ended Mar. 31, 1975 and 1976 (thousand dollars)

Item and province or territory	Construction		Maintenance and administration		Total expenditure	
	1975	1976	1975	1976	1975	1976
EXPENDITURE ON PROVINCIAL, FEDERAL AND OTHER UTILITY ROADS ^{1,2}	1,514,888	1,511,393	704,649	912,836	2,219,537	2,424,229
Newfoundland	49,570	55,976	32,977	59,906	82,547	115,882
Prince Edward Island	6,974	8,164	9,983	12,350	16,957	20,514
Nova Scotia	55,546	51,885	41,702	69,867	97,248	121,752
New Brunswick	84,082	75,751	39,190	52,075	123,272	127,826
Quebec	539,467	512,504	203,254	250,775	742,721	763,279
Ontario	369,545	326,303	144,472	181,186	514,017	507,488
Manitoba	36,115	46,437	44,407	59,507	80,522	105,944
Saskatchewan	65,029	72,036	33,920	45,211	98,949	117,247
Alberta	157,453	170,705	53,579	43,401	211,032	214,106
British Columbia	126,241	164,344	85,909	120,331	212,150	284,674
Yukon and Northwest Territories	24,867	27,288	15,257	18,228	40,124	45,516

15.10 Construction, maintenance and administration expenditure on roads and streets, by province, years ended Mar. 31, 1975 and 1976 (thousand dollars) (concluded)

Item and province or territory	Construction		Maintenance and administration		Total expenditure	
	1975	1976	1975	1976	1975	1976
EXPENDITURE ON MUNICIPAL ROADS^{1,2}	761,764	945,859	822,696	1,078,951	1,584,460	2,024,810
Newfoundland	7,176	11,829	7,732	13,144	14,908	24,973
Prince Edward Island	747	489	1,262	1,697	2,009	2,186
Nova Scotia	13,292	13,689	12,805	16,252	26,097	29,941
New Brunswick	19,728	25,041	14,850	20,678	34,578	45,719
Quebec	163,230	199,435	203,403	260,974	366,633	460,409
Ontario	309,229	377,508	340,866	418,223	650,095	795,731
Manitoba	42,263	42,571	35,706	49,747	77,969	92,318
Saskatchewan	33,938	49,703	54,899	76,224	88,837	125,927
Alberta	99,598	140,040	97,031	136,725	196,629	276,765
British Columbia	69,587	83,283	52,498	81,960	122,085	165,243
Yukon and Northwest Territories	2,976	2,271	1,644	3,327	4,620	5,598

¹Includes small amounts paid by private companies and other organizations in connection with railway grade crossings and overpasses.

²Provincial and federal subsidies to municipalities amounted to \$437 million in 1975 and \$483 million in 1976 and should be added to provincial and federal expenditures and subtracted from municipal expenditures to arrive at net expenditures for the respective levels of government.

³Fiscal year for municipalities ends the previous Dec. 31.

15.11 Motor vehicles registered for road use, by province, 1973-77

Province or territory	1973	1974	1975 ¹	1976	1977
Newfoundland	153,585	163,975	170,612	178,110	178,425
Prince Edward Island	49,141	53,332	55,459	57,551	61,138
Nova Scotia	325,871	346,392	345,453	362,526	382,635
New Brunswick	256,042	274,173	288,658	300,506	318,662
Quebec	2,556,260	2,799,352	2,702,272	2,907,670	3,135,593
Ontario	3,583,379	3,744,158 ¹	3,913,452	4,102,344	4,352,290
Manitoba	471,507	508,751	535,808	568,534	603,318
Saskatchewan	523,557	568,918	613,269	653,408	694,446
Alberta	933,673	1,035,562	1,073,020	1,168,377	1,275,236
British Columbia	1,281,917	1,333,277	1,554,081	1,457,570	1,555,744
Yukon	10,663	13,620	13,947	16,237	15,149
Northwest Territories	12,845	13,048	12,482	13,476	14,611
Canada	10,158,440	10,854,558 ¹	11,278,513	11,786,309	12,547,247

15.12 Types of motor vehicles registered, by province, 1976 and 1977 with totals for 1973-77

Year, province or territory	Passenger cars ¹	Trucks and buses ²	Motorcycles and mopeds	Other ³	Total
1976					
Newfoundland	129,630	41,086	2,699	4,695	178,110
Prince Edward Island	42,015	14,104	1,432	*	57,551
Nova Scotia	270,063	81,433	10,365	665	362,526
New Brunswick	226,070	61,921	8,490	4,025	300,506
Quebec	2,350,330	318,243	204,113	34,984	2,907,670
Ontario	3,341,845	669,825	90,674	*	4,102,344
Manitoba	413,072	144,107	10,915	440	568,534
Saskatchewan	370,144	261,181	11,312	10,771	653,408
Alberta	789,385	349,327	29,665	*	1,168,377
British Columbia ³	1,070,461	362,276	24,833	*	1,457,570
Yukon	7,138	8,625	474	*	16,237
Northwest Territories	6,105	6,523	808	40	13,476
1977					
Newfoundland	127,205	43,238	3,011	4,971	178,425
Prince Edward Island	44,106	15,440	1,592	*	61,138
Nova Scotia	275,011	91,529	12,225	3,870	382,635
New Brunswick	235,164	69,501	9,554	4,443	318,662
Quebec	2,522,648	346,430	229,053	37,462	3,135,593
Ontario	3,490,477	767,054	94,759	*	4,352,290
Manitoba	431,419	157,386	13,950	563	603,318
Saskatchewan	425,409	211,608	8,000	9,429	654,446
Alberta	864,415	376,960	33,861	*	1,275,236
British Columbia ³	1,126,293	399,342	30,109	*	1,555,744
Yukon	6,203	8,365	581	*	15,149
Northwest Territories	5,940	7,492	1,105	74	14,611

15.12 Types of motor vehicles registered, by province, 1976 and 1977 with totals for 1973-77 (concluded)

Year, province or territory	Passenger cars ¹	Trucks and buses ²	Motorcycles and mopeds	Other ³	Total	
Canada	1977	9,554,290	2,494,345	437,800	60,812	12,547,247
	1976	9,016,258	2,318,651	395,780	55,620	11,786,309
	1975 ^r	8,692,821	2,177,410	356,122	52,160	11,278,513
	1974 ^r	8,328,393	2,026,210	319,923	180,032	10,854,558
	1973	7,866,084	1,843,932	287,820	160,604 ^{s,r}	10,158,440

¹Includes taxis and rent-a-car.

²Includes other types of motor vehicles, in certain provinces or territories, while certain classes of trucks and/or buses have been included under passenger cars in five provinces.

³Includes ambulances, fire trucks and some government vehicles.

⁴Included in trucks and buses or in passenger cars.

⁵Estimated, due to new licence program.

⁶Figures not complete; farm tractors (where registered) included from 1973 to 1974.

15.13 Provincial revenue from the registration and operation of motor vehicles, by province, for the licence years 1975 and 1976 (dollars)

Year, province or territory	Motor vehicle licences and fees ¹	Chauffeur and driver licences	Public service vehicle fees ²	Motive fuel taxes	Other ³	Total	Commission allowed gasoline agents ⁴
1975							
Newfoundland	6,542,754	689,689	237,907	34,279,964	1,434,950	43,185,264	134,819
Prince Edward Island	2,093,808	139,388	88,904	8,219,308	323,591	10,864,999	84,260
Nova Scotia	17,282,697	1,146,256	431,411	56,038,671	1,663,415 ⁷	76,562,450 ⁸	387,231
New Brunswick	14,539,947	646,450	^a	46,216,319	1,272,642	62,675,358	249,450
Quebec	130,550,185	9,861,779	8,220,630	419,771,055	7,821,418	576,225,067	2,161,712
Ontario	189,152,204	9,849,539	8,917,226	577,986,806	27,607,883	813,513,658	^a
Manitoba	12,599,122	1,634,507	4,655,120	58,205,912	217,728	77,312,389	288,961
Saskatchewan	19,435,889	1,002,402	^a	45,329,084	2,887,692	68,655,067	760,111
Alberta	34,592,239	1,984,752	250,386	82,429,202	4,552,784	123,809,363	990,491
British Columbia	46,043,434	1,972,877	769,425	170,910,080	18,751 ⁷	219,714,567 ⁸	1,431,378
Yukon	786,859	43,381	214,771	3,384,029	491,206	4,920,246	—
Northwest Territories	419,102	30,846	114,754	2,626,736	165,631	3,357,069	—
Canada	474,038,240	29,001,866	23,900,534	1,505,397,166	48,457,691 ⁷	2,080,795,497 ⁸	6,488,413
1976							
Newfoundland	8,096,579	1,085,720	241,338	37,708,103	921,009	48,052,749	⁷
Prince Edward Island	2,027,830	143,533	90,055	8,319,836	356,746	10,938,000	84,894
Nova Scotia	19,560,952	1,154,890	415,550	57,565,494	2,462,899	81,159,785	379,433
New Brunswick	14,637,785	667,486	187,800	49,475,481	1,334,678	66,303,230	245,285
Quebec	156,126,154	10,088,008	7,453,239	424,317,276	11,237,156	609,221,833	2,178,699
Ontario	213,097,383	8,761,797	7,190,289	587,093,466	33,419,607	849,562,542	^a
Manitoba	13,701,092	1,898,260	5,079,220	65,609,649	—	86,288,221	317,392
Saskatchewan	19,240,248	970,034	^a	59,018,176	1,865,300	81,093,758	597,834
Alberta	37,770,494	2,941,866	457,683	90,585,421	6,318,178	138,073,642	1,068,925
British Columbia	53,268,814	1,952,387	786,231	177,243,791	3,723,935	236,975,158	1,426,163
Yukon	817,354	72,108	116,649	2,882,392	258,522	4,147,025	—
Northwest Territories	454,511	42,183	90,505	3,963,218	—	4,550,417	—
Canada	538,799,196	29,778,272	22,108,559	1,563,782,303	61,898,030	2,216,366,360	6,298,625

¹Includes passenger cars, motor trucks and buses, motorcycles, other motor vehicles, trailers and transfer of motor vehicle ownership.

²Includes passenger and freight.

³Includes gasoline or service station licences, garage licences, fines for infractions of motor vehicle act and other miscellaneous revenue.

⁴Deducted from gross tax collections to obtain motive fuel taxes.

⁵Included with motor vehicle licences and fees.

⁶Commission payments discontinued, effective May 1, 1972.

⁷Commission payments discontinued, effective Nov. 25, 1975.

15.14 Motor vehicle and traffic regulations, 1979

Province or territory	Age required for operator's licence	Type of licence ¹	Licence renewal	Motor vehicle protection	Speed limits ²
Newfoundland	16 (motorcycle) 17 (automobile or truck)	Classified ¹	Every three years on the licensee's birth date	Insurance compulsory (minimum of \$75,000 public liability) Judgment recovery fund	90km/h ³
Prince Edward Island	16	Chaufeur Operator	Every two years at the end of the licensee's birth month	Insurance compulsory Judgment recovery fund	80km/h
Nova Scotia	16	Chaufeur Operator	Every three years at the end of the licensee's birth month	Unsatisfied judgment fund	80km/h
New Brunswick	16 ⁴	Classified ¹	Every two years at the end of the licensee's birth month	Unsatisfied judgment fund	80km/h (unless otherwise posted)
Quebec	16 (driving course compulsory) 18 (5 months learner permit or driving course)	Classified ¹	Every two years; odd-numbered years for those born in odd-numbered years, and even years for those born in even years	Insurance compulsory	90km/h
Ontario	16	Classified ¹	Every three years on the licensee's birth date	Motor vehicle accident claims fund	100km/h (unless otherwise posted)
Manitoba	16 ³	Classified ¹	Annually at the end of the licensee's birth month	Insurance compulsory	90km/h (unless otherwise posted)
Saskatchewan	16 ³	Classified ¹	Annually at the end of the licensee's birth month	Insurance compulsory	80km/h (unless otherwise posted)
Alberta	16 ³	Operator	Every five years expiring on the licensee's birth date ⁴	Insurance compulsory	100km/h (day) 90km/h (night) (unless otherwise posted)
British Columbia	16	Classified ¹	Every five years expiring on the licensee's birth date	Insurance compulsory	80km/h
Yukon	16 ³	Classified ¹	Every three years on the licensee's birth date ^{4,5}	Insurance compulsory \$75,000 minimum PL and PD	90km/h (unless otherwise posted)
Northwest Territories	16	Classified ¹	Annually on March 31	Insurance compulsory	90km/h (unless otherwise posted)

¹Classified driver licensing is part of a Canada-wide program to match the driver's skills, experience and responsibilities with the type of vehicle being driven for example, automobiles, motorcycles, buses or heavy trucks and tractor trailers. Several provinces have adopted this plan, discontinuing the chauffeur licence and issuing a driver's licence in a certain class.

²Slower speeds are required in cities, towns and villages.

³Age 18 required for certain types of vehicles.

⁴Annually, for applicants, 70 years of age and over, for certain classes of licence.

⁵Annually, where a medical report is required.

15.15 Sales of motive fuels, by province, 1973-77 (thousand litres)

Province or territory	1973	1974 ^r	1975	1976	1977
Gasoline					
Newfoundland	480 735	534 685	540 285	553 000	563 765
Prince Edward Island	153 947	160 291	167 394	169 190	174 899
Nova Scotia	983 942	1 043 161	1 087 903	1 109 306	1 129 726
New Brunswick	843 704	884 366	947 878	967 933	990 899
Quebec	7 446 381	7 556 244	8 176 727	8 233 337	8 402 875
Ontario	11 200 639	11 514 614	11 898 816	11 977 129	12 141 362
Manitoba	1 212 172	1 272 738	1 320 216	1 355 354	1 377 589
Saskatchewan	1 180 710	1 249 168	1 347 108	1 408 966	1 444 593
Alberta	2 528 560	2 740 597	2 938 584	3 167 612	3 417 077
British Columbia	3 087 186	3 306 360	3 316 892	3 413 862	3 552 807
Yukon	40 852	42 206	47 688	46 582	49 099
Northwest Territories	32 838	33 557	34 553	35 359	32 731
Total, net sales	29 191 666	30 337 986	31 824 044	32 437 630	33 277 421
Sales exempt from tax or taxed at lesser rates	2 212 000	2 562 014	2 690 000	2 477 260	2 495 490
Total, gross sales	31 404 000	32 900 000	34 514 000	34 914 890	35 772 912
Diesel oil					
Total, net sales	3 293 907	3 867 714	4 058 578	4 400 418	4 772 715
Liquefied petroleum gases					
Total, net sales	..	32 674	31 601	32 477	30 297

15.16 Canadian intercity bus industry, 1976 and 1977

Year and item		Class 1 and 2 (\$500,000 and over)	Class 3 (\$100,000-499,999)	Class 4, 5 and unknown (under \$100,000)	Total, all classes
1976					
Establishments reporting	No.	18	7	33	58
Total operating revenue	\$'000	184,224	2,345	3,012	189,581
Number of employees (including working owners)	No.	5,280	118	159	5,557
Equipment operated					
Highway buses	"	1,396	55	80	1,531
Urban and suburban buses	"	429	—	15	444
School buses	"	62	15	26	103
Other equipment	"	1	6	3	10
Total, equipment	"	1,888	76	124	2,088
Fare passengers carried	'000	31,952	1,217	..	33,169
Total vehicle kilometres travelled	'000	177 299 ^r	4 885 ^r	..	182 184 ^r
1977					
Establishments reporting	No.	20	15	30	65
Total operating revenue	\$'000	212,648	4,652	2,162	219,462
Number of employees (including working owners)	No.	5,598	259	118	5,975
Equipment operated					
Highway buses	"	1,482	93	48	1,623
Urban and suburban buses	"	449	14	18	481
School buses	"	49	80	8	137
Other equipment	"	13	3	7	23
Total, equipment	"	1,993	190	81	2,264
Fare passengers carried	'000	34,747	1,887	..	36,634
Total vehicle kilometres travelled	'000	194 066	5 623	..	199 689

15.17 The Canadian Urban Transit Industry, 1976 and 1977

Year and item		Class 1 and 2 (\$500,000 and over)	Class 3 (\$100,000- 499,999)	Class 4, 5 and unknown (under \$100,000)	Total, all classes
1976					
Establishments reporting	No.	39	22	14	75
Total operating revenue	\$'000	653,179	13,807	2,213	669,199
Number of employees (including working owners)	No.	27,456	745	101	28,302
Equipment operated					
Highway buses	"	18	8	3	29
Urban and suburban buses	"	8,071	405	73	8,549
School buses	"	231	46	4	281
Other equipment	"	1,861	—	5	1,866
Total, equipment	"	10,181	459	85	10,725
Fare passengers carried	'000	1,195,279	23,674	..	1,218,953
Total, vehicle kilometres	'000	547 300 ^r	15 833	..	563 133 ^r
1977					
Establishments reporting	No.	53	12	10	75
Total operating revenue	\$'000	736,467	4,056	2,037	742,560
Number of employees (including working owners)	No.	29,505	207	87	29,799
Equipment operated					
Highway buses	"	75	14	—	89
Urban and suburban buses	"	8,782	87	50	8,919
School buses	"	245	4	—	249
Other equipment	"	2,009	4	—	2,013
Total, equipment	"	11,111	109	50	11,270
Fare passengers carried	'000	1,206,445	4,772	..	1,211,217
Total, vehicle kilometres	'000	576 385	4 213	..	580 598

15.18 Commodities transported by motor carriers, by mass, 1976 (thousand tonnes)

Commodity	1976	Commodity	1976
LIVE ANIMALS	1 398	Crude oil and bituminous substances	1 735
Cattle	890	Other crude non-metallic minerals	10 045
Other live animals	508	Waste materials	1 306
FOOD, FEED, BEVERAGES AND TOBACCO	18 133	FABRICATED MATERIALS, INEDIBLE	47 589
Meat, fresh or frozen	536	Lumber and sawn timber	2 359
Other animal products	4 951	Other wood fabricated materials	781
Grains	1 326	Wood pulp and other pulp	151
Milled cereals and cereal products	274	Newsprint	1 115
Fruits and fruit preparations	723	Other paper and paperboard	423
Vegetables and vegetable preparations	1 460	Chemicals and related products	4 296
Sugar and sugar preparations	723	Fertilizers and fertilizer materials	1 175
Other food and food preparations	4 392	Petroleum and coal products	15 094
Animal feed	1 127	Metals and primary metal products	9 350
Beverages	2 439	Cement and concrete basic products	6 423
Tobacco and tobacco products	182	Other fabricated materials	6 422
CRUDE MATERIALS, INEDIBLE	23 418	END PRODUCTS, INEDIBLE	12 577
Crude animal and vegetable materials	832	Road motor vehicles and parts	2 841
Pulpwood	1 101	Other end products	9 736
Other crude wood materials	5 373	CONTAINERS AND CLOSURES	1 722
Textile fibres	56	GENERAL FREIGHT	3 313
Iron ore	700	Total	108 150
Other metallic ores	2 210		
Coal	60		

15.19 Canadian for-hire trucking industry¹, excluding household-goods movers, by province, 1976 and 1977

Item		Province or territory					
		Atlantic provinces		Quebec		Ontario	
		1976	1977	1976	1977	1976	1977
Establishments reporting	No.	212	245	637	691	703	815
Total operating revenues	\$'000	148,871	170,629	618,589	679,405	1,158,241	1,314,609
Total operating expenses	"	141,884	164,819	594,803	653,016	1,112,456	1,258,078
Net operating revenues	"	6,987	5,810	23,786	26,389	45,785	56,531
Average number of employees (including working owners)	No.	4,292	4,477	20,306	19,838	34,081	35,096
Equipment:							
Trucks	"	1,393	1,298	7,263	5,922	6,440	6,994
Tractors	"	1,185	1,392	7,680	7,072	12,959	13,438
Semi-trailers	"	2,465	3,170	12,981	11,369	26,372	28,036
Full-trailers	"	229	104	2,480	734	2,600	1,716
Other equipment	"	113	113	944	953	1,266	1,372
Total, equipment	"	5,385	6,077	31,348	26,050	49,637	51,556
		Manitoba		Saskatchewan		Alberta	
		1976 ^a	1977	1976 ^a	1977	1976	1977
Establishments reporting	No.	98	123	84	121	369	452
Total operating revenues	\$'000	185,876	191,007	35,526	53,548	354,981	446,980
Total operating expenses	"	177,645	185,744	34,136	50,735	336,687	425,735
Net operating revenues	"	8,231	5,263	1,390	2,813	18,294	21,246
Average number of employees (including working owners)	No.	4,710	4,577	973	1,369	8,167	9,158
Equipment:							
Trucks	"	933	1,028	203	350	1,538	1,812
Tractors	"	1,506	1,492	468	618	3,115	3,328
Semi-trailers	"	4,396	4,538	719	1,028	6,839	7,799
Full-trailers	"	56	25	27	24	473	191
Other equipment	"	194	165	27	8	429	230
Total, equipment	"	7,085	7,248	1,444	2,028	12,394	13,360
		British Columbia		Yukon and Northwest Territories		Canada	
		1976	1977	1976	1977	1976	1977
Establishments reporting	No.	356	427	8	8	2,467	2,882
Total operating revenues	\$'000	356,712	409,138	5,027	4,829	2,863,822	3,270,146
Total operating expenses	"	344,642	390,741	4,610	4,601	2,746,863	3,133,471
Net operating revenues	"	12,070	18,396	417	227	116,959	136,675
Average number of employees (including working owners)	No.	9,762	9,710	87	89	82,378	84,314
Equipment:							
Trucks	"	2,430	2,219	31	21	20,231	19,644
Tractors	"	2,840	3,039	34	48	29,787	29,427
Semi-trailers	"	5,040	5,706	60	80	58,872	61,726
Full-trailers	"	468	286	1	1	6,334	3,081
Other equipment	"	592	517	2	3	3,567	3,361
Total, equipment	"	11,370	11,767	128	153	118,791	118,239

¹Revenue classes 1, 2 and 3 only.

^aClass 1 Manitoba and Saskatchewan domiciled carriers were grouped to meet confidentiality requirements.

15.20 Canadian for-hire trucking industry¹, excluding household-goods movers, by revenue class, 1976 and 1977

Year and item		Class 1 (\$2,000,000 and over)	Class 2 (\$500,000-1,999,999)	Class 3 (\$100,000-499,999)	Total, all classes
1976					
Establishments reporting	No.	197	546	1,724	2,467
Total operating revenue	\$'000,000	1,768	629	468	2,864
Equipment operated					
Straight trucks	No.	8,329	4,996	6,906	20,231
Truck tractors	"	17,173	7,426	5,188	29,787
Trailers (semi- and full-)	"	44,726	13,592	6,888	65,206
Other equipment	"	1,530	1,265	772	3,567
Total, equipment	"	71,758	27,279	19,754	118,791

15.20 Canadian for-hire trucking industry¹, excluding household-goods movers, by revenue class, 1976 and 1977 (concluded)

Year and item		Class 1 (\$2,000,000 and over)	Class 2 (\$500,000- 1,999,999)	Class 3 (\$100,000- 499,999)	Total, all classes
1977P					
Establishments reporting	No.	223	617	2,042 ^a	2,882
Total operating revenue	\$'000,000	2,060	684	527 ^a	3,271
Equipment operated					
Straight trucks	No.	7,623	4,755	7,266 ^a	19,644
Truck tractors	"	17,880	7,117	5,430 ^a	30,427
Trailers (semi- and full-)	"	43,807	13,471	7,529 ^a	64,807
Other equipment	"	2,328	773	260 ^a	3,361
Total, equipment	"	71,638	26,116	20,485 ^a	118,239

¹Revenue classes 1, 2 and 3.

^aThese figures include carriers which were added to the survey universe for the first time in 1977.

15.21 Canadian for-hire trucking industry¹, excluding household-goods movers, by major type of service, 1976 and 1977

Year and item		General freight	Bulk liquids	Dump (sand, gravel, snow)	Forest products	Other commodities	Total
1976							
Establishments operating	No.	1,021	210	274	295	667	2,467
Total operating revenue	\$'000	1,795,740	156,481	106,203	123,726	681,670	2,863,822
Total operating expenses	"	1,723,327	146,155	102,083	119,296	656,000	2,746,863
Net operating revenue	"	72,414	10,326	4,120	4,429	25,669	116,959
Average number of employees (including working owners)	No.	55,727	3,665	2,887	3,230	16,869	82,378
Equipment operated							
Trucks	"	14,216	850	1,374	728	3,063	20,231
Tractors	"	18,201	1,626	987	1,300	7,673	29,787
Semi-trailers	"	40,909	1,998	901	1,550	13,514	58,872
Full-trailers	"	6,006	637	617	599	2,045	9,901
Other equipment	"						
Total, equipment	"	79,329	5,111	3,879	4,177	26,295	118,791
1977P							
Establishments operating	No.	1,157	259	387	376	703	2,882
Total operating revenue	\$'000	2,002,399	177,775	139,540	150,166	800,266	3,270,146
Total operating expenses	"	1,924,423	166,771	131,546	141,587	769,150	3,133,471
Net operating revenue	"	77,976	11,004	7,994	8,579	31,116	136,675
Average number of employees (including working owners)	No.	55,608	3,839	3,186	3,283	16,610	82,526
Equipment operated							
Trucks	"	13,287	1,029	1,580	738	3,010	19,644
Tractors	"	18,447	1,600	1,178	1,710	7,492	30,427
Semi-trailers	"	40,088	2,580	1,622	2,220	15,216	61,726
Full-trailers	"	4,681	149	279	221	1,112	6,442
Other equipment	"						
Total, equipment	"	76,503	5,358	4,659	4,889	26,830	118,239

¹Revenue classes 1, 2 and 3 only.

15.22 Vessels entered at Canadian ports, 1975-78

Year	In international seaborne shipping		In coastwise shipping		Total	
	Vessels	Net registered tons ¹	Vessels	Net registered tons ¹	Vessels	Net registered tons ¹
1975	20,225	115,591,697	46,867	83,731,925	67,092	199,323,622
1976	21,898	124,070,721	41,581	83,173,354	63,479	207,244,075
1977	23,374	132,266,746	41,741	86,369,055	65,115	218,635,801
1978	23,433	138,687,621	44,606	86,521,016	68,039	225,208,637

¹The capacity of the spaces within the hull, and the enclosed spaces above the deck, available for cargo and passengers; excluding spaces used for the accommodation of officers and crew, navigation, propelling machinery and fuel. A registered ton is equivalent to 100 cu ft and it is expected that this internationally recognized measure, like the nautical mile and the knot, will continue in use for some considerable time.

15.23 Cargoes loaded and unloaded at principal Canadian ports from vessels in international seaborne and coastwise shipping, by province, 1978 with total for 1977 (tonnes)

Province and port	International		Coastwise		Total 1978	Total 1977
	Loaded	Unloaded	Loaded	Unloaded		
NEWFOUNDLAND	<i>1 443 698</i>	<i>914 265</i>	<i>722 849</i>	<i>2 603 040</i>	<i>5 683 852</i>	<i>5 836 597</i>
St. John's	18 116	2 935	126 502	772 536	920 089	850 557
Stephenville	654 137	—	120 643	39 499	814 279	809 754
Holyrood	694	436 003	268 103	136 483	841 283	856 359
Corner Brook	276 864	32 895	6 632	319 324	635 715	656 952
Come By Chance	—	—	—	11 796	11 796	11 474
Port aux Basques	2 366	246	85 367	315 359	403 338	451 451
PRINCE EDWARD ISLAND	<i>68 411</i>	<i>1 361</i>	<i>31 063</i>	<i>658 509</i>	<i>759 344</i>	<i>766 181</i>
Charlottetown	15 400	1 361	27 688	501 319	545 768	670 564
NOVA SCOTIA	<i>793 1215</i>	<i>7 346 813</i>	<i>5 530 854</i>	<i>2 161 893</i>	<i>22 970 775</i>	<i>23 767 311</i>
Halifax	3 691 025	4 440 818	2 226 864	657 200	11 015 907	11 079 461
Port Hawkesbury	1 279 375	2 733 016	1 482 449	59 144	5 553 984	7 269 666
Hantsport	1 553 175	—	5 063	—	1 558 238	1 311 779
Sydney	552 083	138 655	706 084	1 116 845	2 513 667	1 918 651
Little Narrows	600 110	—	335 356	—	935 466	899 089
North Sydney	10 512	331	288 065	92 658	391 566	440 785
NEW BRUNSWICK	<i>4 274 867</i>	<i>6 995 933</i>	<i>1 790 415</i>	<i>1 348 360</i>	<i>14 409 575</i>	<i>12 005 874</i>
Saint John	3 405 704	6 670 897	1 741 250	723 588	12 541 439	10 207 309
Dalhousie	549 598	23 433	—	118 842	691 873	647 929
Newcastle	200 351	—	—	206 342	406 693	462 216
QUEBEC	<i>52 214 897</i>	<i>18 259 394</i>	<i>11 391 148</i>	<i>21 115 160</i>	<i>102 980 599</i>	<i>116 650 316</i>
Sept-Îles-Pointe-Noire	18 776 521	240 862	2 805 688	805 174	22 628 245	32 088 129
Montreal	4 813 781	3 325 932	3 618 124	4 480 160	16 237 997	16 810 146
Port-Cartier	16 052 049	3 167 854	427 681	2 041 398	21 688 982	21 771 691
Quebec	3 873 664	4 218 540	1 610 874	3 977 921	13 680 999	13 910 914
Baie-Comeau	3 344 067	1 564 722	194 587	2 258 364	7 361 740	6 582 327
Sorel	2 533 387	416 451	22 022	3 364 401	6 336 261	5 741 013
Port-Alfred	361 998	3 177 084	—	312 702	3 851 784	4 311 582
Trois-Rivières	1 260 386	902 460	1 599	1 083 860	3 248 305	2 601 513
Havre-Saint-Pierre	112 601	—	2 059 454	13 396	2 185 451	2 445 221
Contrecoeur	646 448	1 115 259	401 374	686 118	2 849 199	2 215 527
Chicoutimi	—	—	—	686 449	686 449	628 858
Forestville	—	—	—	24 411	24 411	102 550
ONTARIO	<i>10 162 021</i>	<i>23 527 921</i>	<i>24 790 481</i>	<i>16 583 891</i>	<i>75 064 314</i>	<i>75 436 900</i>
Thunder Bay	3 314 282	232 380	15 245 348	1 041 213	19 833 223	19 819 458
Hamilton	185 318	6 980 371	365 375	5 480 848	13 011 912	12 005 400
Sarnia	1 366 965	3 580 601	3 159 221	316 227	8 423 014	8 032 132
Sault Ste Marie	140 940	3 719 243	177 514	1 773 483	5 811 180	6 129 355
Toronto	141 620	957 223	275 036	1 187 750	2 561 629	2 705 502
Clarkson	271 437	87 694	221 040	2 112 466	2 692 637	2 511 944
Windsor-Walkerville	1 070 073	945 162	495 846	546 763	3 057 844	2 949 434
Port Colborne	1 157 806	9 209	132 205	466 667	1 765 887	1 646 829
Colborne	—	—	20 709 962	—	20 709 962	1 855 644
Pictou	655 471	151 621	253 002	46 960	1 107 054	1 625 274
Goderich	262 055	12 595	886 154	319 083	1 843 887	1 552 878
Lakeview (Port Credit)	—	1 490 525	68 280	50 690	1 609 495	2 345 603
Depot Harbour	660 401	—	—	—	660 401	579 354
Little Current	214 235	—	72 340	53 034	339 609	668 465
Midland	—	23 889	35 425	622 504	681 818	782 212
Prescott	—	65 159	—	276 112	341 271	508 549
Nanticoke	—	3 271 110	190 58	76 190	3 366 358	3 552 677
Badgley Island	74 237	—	432 919	—	507 156	417 448
Parry Sound	20 868	18 917	—	541 635	581 420	512 619
MANITOBA	<i>542 541</i>	<i>28 143</i>	<i>20 926</i>	<i>4 649</i>	<i>596 259</i>	<i>809 750</i>
Churchill	542 541	28 143	20 926	4 649	596 259	809 750
BRITISH COLUMBIA	<i>39 884 411</i>	<i>4 693 364</i>	<i>16 384 213</i>	<i>16 083 725</i>	<i>77 045 713</i>	<i>64 903 454</i>
Vancouver ¹	23 354 157	3 112 905	3 648 683	3 890 193	34 005 938	36 183 933
New Westminster	1 100 555	551 376	501 652	2 104 281	4 257 864	2 494 785
Nanaimo	1 246 730	17 082	171 860	748 165	2 183 837	1 705 565
Duncan Bay-Campbell River	339 936	121 151	348 162	943 895	1 753 144	1 436 639
Britannia Beach	40 753	12 050	107 916	184 028	1 315 993	739 636
Victoria	621 565	68 631	1 391 916	426 091	2 508 203	2 300 026
Powell River	199 919	36 419	686 244	382 597	1 305 179	788 833
Crofton	956 123	54 545	42 797	755 099	1 808 564	1 308 870
Kitimat	458 815	644 149	287 870	45 854	1 436 688	1 314 607
Prince Rupert	1 419 192	6 958	97 194	269 629	1 792 973	1 016 458
Port Alberni	785 876	1 888	44 993	278 449	1 111 206	903 031
Tasu	562 043	—	844	5 512	568 399	364 711
Andys Bay	—	—	11 340	505 633	516 973	480 237
Squamish	452 306	16 960	173 391	80 472	723 129	639 732
Vanguard	—	—	357 281	374 978	732 259	779 245
Gold River	167 008	11 574	169 523	253 031	601 136	493 737
Sooke	433 011	—	27 850	395	461 256	574 928
Howe Sound	—	9 072	202 132	971 234	1 182 438	1 278 226
NORTHWEST TERRITORIES	—	<i>25 974</i>	<i>6 142</i>	<i>108 864</i>	<i>140 980</i>	<i>94 260</i>
Total	<i>116 522 061</i>	<i>61 793 168</i>	<i>60 668 091</i>	<i>60 668 091</i>	<i>299 651 411</i>	<i>295 270 643</i>

¹Includes Roberts Bank.

15.24 Principal commodities in water-borne cargo loaded and unloaded at ports handling large tonnage in 1977 and 1978 (tonnes)

Year, port and commodity	International		Coastwise		Total
	Loaded	Unloaded	Loaded	Unloaded	
1977					
VANCOUVER ¹	27 776 182	2 788 825	2 225 999	3 392 927	36 183 933
Coal, bituminous	9 423 445	—	144 557	—	9 568 002
Wheat	5 232 687	—	—	—	5 232 687
Sand and gravel	2 903	819 499	39 146	1 807 206	2 668 754
Sulphur in ores	2 648 886	—	11 481	—	2 660 367
Lumber and timber	2 227 739	27 988	68 940	99 104	2 423 771
Potash	1 322 232	—	476	—	1 322 708
Logs	255 514	10 755	32 762	730 469	1 029 500
Barley	1 095 635	—	—	—	1 095 635
Fuel oil	137 671	—	688 896	—	826 567
Pulpwood	338 384	—	540 743	39 684	918 811
Rapeseed	861 848	—	—	—	861 848
Containerized freight	550 932	520 195	—	—	1 071 127
Salt	—	291 575	35 087	—	326 662
Gasoline	28 749	—	292 423	—	321 172
Pulp	649 902	1 778	4 619	145 672	801 971
Cement	41 878	26 080	6 534	73 960	148 452
Newsprint	19 431	—	—	236 490	255 921
Inorganic chemicals	12 188	3 039	97 110	2 014	114 351
Limestone	293 952	—	3 629	215 530	513 111
Flaxseed	129 264	—	—	—	129 264
Asbestos	65 215	—	—	—	65 215
Waste and scrap	44	6	66 912	3 220	70 182
Building paper and board	218	108	10 530	—	10 856
Petroleum and coal products	234 060	—	326	36	234 422
Concentrated and complete feeds	324 973	—	—	—	324 973
Phosphate rock	—	647 033	—	—	647 033
Other commodities not listed	1 878 432	440 769	181 828	39 542	2 540 571
SEPT-ÎLES-POINTE-NOIRE	26 460 726	382 828	4 069 517	1 175 058	32 088 129
Iron ore and concentrates	26 449 877	—	4 061 199	—	30 511 076
Fuel oil	—	63 257	619	921 472	985 348
Bentonite	—	241 829	—	—	241 829
Other commodities not listed	10 849	77 742	7 699	253 586	349 876
PORT-CARTIER	17 503 987	1 847 160	22 633	2 397 911	21 771 691
Iron ore and concentrates	13 443 309	—	17 971	—	13 461 280
Wheat	2 283 314	368 296	—	1 796 662	4 448 272
Corn	1 312 842	1 310 863	—	12 325	2 636 030
Barley	270 700	26 965	—	209 103	506 768
Fuel oil	—	—	—	267 705	267 705
Other commodities not listed	193 822	141 036	4 662	112 116	451 636
THUNDER BAY	3 366 182	416 328	15 090 650	946 298	19 819 458
Wheat	240 244	—	9 403 232	—	9 643 476
Iron ore and concentrates	1 575 891	—	3 004 074	—	4 579 965
Barley	203 086	—	1 951 220	—	2 154 306
Oats	197 511	—	308 507	—	506 018
Rapeseed	166 793	—	—	—	166 793
Flaxseed	188 417	—	32 174	—	220 591
Fuel oil	—	—	—	284 149	284 149
Gasoline	—	—	—	194 682	194 682
Hulls, screenings and chaff	32 611	—	72 728	—	105 339
Newsprint	165 975	—	1 114	—	167 089
Rye	60 350	—	28 130	—	88 480
Concentrated and complete feeds	313 298	—	—	—	313 298
Other commodities not listed	222 006	416 328	289 471	467 467	1 395 272
MONTREAL	5 040 288	3 638 712	3 938 471	4 192 675	16 810 146
Fuel oil	1 048 863	886 929	2 213 270	581 994	4 731 056
Wheat	1 544 760	68 820	15 143	1 814 253	3 442 976
Containerized freight	884 573	831 330	—	—	1 715 903
Gasoline	9 985	—	1 094 198	43 175	1 147 358
Crude petroleum	—	151 151	—	—	151 151
Salt	—	235 443	1 460	358 300	595 203
Cement	23 766	—	30 022	684	54 472
Gypsum	—	—	—	571 566	571 566
Raw sugar	—	384 173	—	—	384 173
Barley	106 083	—	812	398 567	505 462
Corn	58 649	145 651	1 784	94 087	300 171
Organic chemicals	275 253	22 581	6 838	14	304 686
Coal, bituminous	—	27 748	84 005	—	111 753
Petroleum and coal products	5 277	3	21 317	165 624	192 221
Structural shapes	18 249	82 235	13 491	54	114 029
Lubricating oil and grease	440	2	130 828	4	131 274
Machinery	33 376	21 289	37 815	4 874	97 354
Manganese ore	3 302	106 823	—	—	110 125
Plate and sheet steel	40 296	50 858	6 803	6	97 963
Molasses, crude	—	87 784	—	—	87 784
Bars and rods, steel	14 305	44 803	6 210	6	65 324
Other commodities not listed	973 111	491 089	274 475	159 467	1 898 142
QUEBEC	3 267 364	5 015 527	1 501 499	4 126 524	13 910 914
Crude petroleum	—	4 225 927	21 082	79 463	4 326 472
Fuel oil	97 838	18 913	1 330 907	584 903	2 032 561
Wheat	1 400 164	—	—	1 435 909	2 836 073
Barley	697 079	13 338	—	891 672	1 602 089
Containerized freight	372 100	315 998	—	—	688 098
Gasoline	—	—	72 077	552 649	624 726
Zinc ore and concentrates	284 907	—	—	—	284 907

15.24 Principal commodities in water-borne cargo loaded and unloaded at ports handling large tonnage in 1977 and 1978 (tonnes) (continued)

Year, port and commodity	International		Coastwise		Total
	Loaded	Unloaded	Loaded	Unloaded	
1977 (continued)					
QUEBEC (concluded)					
Pulpwood	—	—	—	71 719	71 719
Corn	39 249	107 086	—	110 193	256 528
Alumina and bauxite ores	—	—	17 377	—	17 377
Newsprint	127 600	—	—	—	127 600
Salt	—	67 623	—	170 997	238 620
Asbestos	1 367	—	—	—	1 367
Other commodities not listed	247 060	266 642	60 056	229 019	802 777
HAMILTON	138 750	5 530 662	306 352	6 029 636	12 005 400
Iron ore and concentrates	24 585	1 126 001	—	5 134 929	6 285 515
Coal, bituminous	—	3 888 828	—	471 157	4 359 985
Fuel oil	—	—	276	254 406	254 682
Plate and sheet steel	98 400	11 692	108 577	2 869	221 538
Sand and gravel	—	114 394	—	16 329	130 723
Soybeans	—	105 558	—	—	105 558
Other commodities not listed	15 765	284 189	197 499	149 946	647 399
HALIFAX	3 525 596	4 588 328	2 135 794	829 743	11 079 461
Crude petroleum	—	3 639 176	—	—	3 639 176
Gypsum	1 932 122	—	252 955	—	2 185 077
Fuel oil	23 518	74 882	1 178 106	439 438	1 715 944
Containerized freight	872 664	753 135	—	—	1 625 799
Gasoline	34 005	—	669 442	195 978	899 425
Wheat	351 647	—	—	153 057	504 704
Other commodities not listed	311 640	121 135	35 291	41 270	509 336
SAINT JOHN	2 475 290	5 097 633	1 994 110	640 276	10 207 309
Crude petroleum	—	4 386 643	—	—	4 386 643
Fuel oil	199 479	—	1 450 338	404 547	2 054 364
Gasoline	268 953	—	533 067	226 033	1 028 053
Wheat	504 679	—	—	—	504 679
Containerized freight	503 195	367 721	—	—	870 916
Raw sugar	—	222 817	—	—	222 817
Pulp	358 155	12	—	—	358 167
Wheat flour	56 537	—	—	—	56 537
Newsprint	173 904	—	—	—	173 904
Other commodities not listed	410 388	120 440	10 705	9 696	551 229
SARNIA	1 092 623	3 542 079	3 040 865	356 565	8 032 132
Coal, bituminous	—	2 708 606	—	79 697	2 788 303
Fuel oil	864 043	—	1 402 934	6 822	2 273 799
Gasoline	16 537	—	900 757	—	917 294
Limestone	—	735 776	—	—	735 776
Wheat	—	—	199 083	130 408	329 491
Petroleum coal products	311	40 188	111 902	11 239	163 640
Inorganic chemicals	4 957	2 268	239 884	—	247 109
Lubricating oil and grease	—	—	26 174	116 229	142 403
Organic chemicals	189 197	13 066	—	9 614	211 877
Other commodities not listed	17 578	42 175	160 131	2 556	222 440
BAIE-COMEAU	3 130 372	1 230 111	78 846	2 142 998	6 582 327
Wheat	2 061 928	395 423	—	1 722 995	4 180 346
Barley	269 543	70 765	—	155 139	495 447
Newsprint	321 945	—	13 656	—	335 601
Alumina and bauxite ores	—	300 286	—	—	300 286
Fuel oil	—	12 989	—	171 687	184 676
Corn	306 071	237 331	—	22 612	566 014
Soybeans	142 798	96 666	—	11 841	251 305
Aluminum	23 542	—	53 756	—	77 298
Other commodities not listed	4 545	116 651	11 434	58 724	191 354
PORT HAWKESBURY	1 448 275	3 481 957	2 271 662	67 772	7 269 666
Crude petroleum	597 273	—	79 463	—	676 736
Fuel oil	57 339	—	1 754 189	65 144	1 876 672
Gypsum	656 976	—	—	—	656 976
Petroleum and coal products	24 582	—	108 545	310	133 437
Gasoline	—	—	329 465	2 318	331 783
Other commodities not listed	112 105	3 481 957	—	—	3 594 062
SAULT STE MARIE	120 504	3 645 041	184 902	2 178 908	6 129 355
Coal, bituminous	—	2 046 952	—	37 048	2 084 000
Iron ore and concentrates	—	900 364	—	1 603 546	2 503 910
Limestone	—	677 288	—	—	677 288
Fuel oil	—	—	—	361 543	361 543
Plate and sheet steel	25 914	—	52 874	—	78 788
Gasoline	—	—	—	141 619	141 619
Other commodities not listed	94 590	20 437	132 028	35 152	282 207
SOREL	2 009 368	403 260	10 601	3 317 784	5 741 013
Titanium ore	—	—	—	2 325 833	2 325 833
Wheat	828 549	33 915	—	839 927	1 702 391
Slag, drosses, byproducts	593 959	—	—	—	593 959
Pig iron	422 147	—	8 090	—	430 237
Coal	—	297 743	—	—	297 743
Barley	80 251	—	—	64 431	144 682
Corn	22 806	1 897	—	18 681	43 384
Fuel oil	—	9 590	—	60 319	69 909
Other commodities not listed	61 656	60 115	2 511	8 593	132 875

15.24 Principal commodities in water-borne cargo loaded and unloaded at ports handling large tonnage in 1977 and 1978 (tonnes) (continued)

Year, port and commodity	International		Coastwise		Total
	Loaded	Unloaded	Loaded	Unloaded	
1977 (concluded)					
NANTICOKE	—	3 443 940	—	108 737	3 552 677
Coal, bituminous	—	3 443 940	—	108 737	3 552 677
Other commodities not listed	—	—	—	—	—
TROIS-RIVIÈRES	898 718	182 917	29 366	1 490 512	2 601 513
Wheat	631 384	—	2 173	622 850	1 256 407
Fuel oil	—	46 139	2 513	576 707	625 359
Barley	—	—	4 371	38 668	43 039
Pulpwood	—	—	—	29 767	29 767
Newsprint	217 782	—	—	—	217 782
Salt	—	13 407	—	77 520	90 927
Other commodities not listed	49 552	123 371	20 309	145 000	338 232
VICTORIA	371 816	45 686	1 569 806	312 718	2 300 026
Wheat	—	—	—	—	—
Logs	6 706	14 772	55 375	20 974	97 827
Sand and gravel	2 776	6 441	1 340 285	—	1 349 502
Lumber and timber	267 654	789	77 107	8 709	354 259
Cement	32 767	7 256	—	27 535	67 558
Gasoline	—	—	507	88 280	88 787
Fuel oil	—	—	1 438	127 215	128 653
Other commodities not listed	61 913	16 428	95 094	40 005	213 440
WINDSOR	885 694	778 284	692 608	592 848	2 949 434
Salt	747 657	—	574 951	—	1 322 608
Gasoline	—	—	—	250 575	250 575
Fuel oil	31 168	6 204	—	146 606	183 978
Plate and sheet steel	—	41 592	—	44 734	86 326
Limestone	—	481 877	—	—	481 877
Other commodities not listed	106 869	248 611	117 657	150 933	624 070
TORONTO	168 546	987 960	191 385	1 357 611	2 705 502
Fuel oil	4 629	—	137 916	181 487	324 032
Coal, bituminous	—	97 859	—	—	97 859
Cement	—	30	3 754	496 890	500 674
Wheat	—	—	34 418	201 366	235 784
Salt	—	117 416	1 510	181 563	300 489
Raw sugar	—	226 029	—	—	226 029
Soybeans	—	183 820	—	16 305	200 125
Barley	—	—	—	100 289	100 289
Other commodities not listed	163 917	362 806	13 787	179 711	720 221
NEW WESTMINSTER	714 771	588 177	240 843	950 994	2 494 785
Sand and gravel	—	69 628	19 868	311 990	401 486
Logs	9 919	—	9	321 440	331 368
Pulpwood	310 019	—	146 038	6 396	462 453
Lumber and timber	53 508	8	26 802	21 115	101 433
Cement	15 102	689	6 888	164 312	186 991
Pulp	22 841	3 272	—	3 583	29 696
Other commodities not listed	303 382	514 580	41 238	122 158	981 358
1978					
VANCOUVER ¹	23 354 157	3 112 905	3 648 683	3 890 193	34 005 938
Coal, bituminous	4 944 533	—	322 706	—	5 267 239
Wheat	5 122 218	—	—	—	5 122 218
Sand and gravel	181	832 007	51 529	1 594 997	2 478 714
Sulphur in ores	2 412 609	—	12 140	—	2 424 749
Lumber and timber	2 069 755	11 170	—	—	2 080 925
Potash	1 601 730	—	—	—	1 601 730
Logs	92 767	6 690	440 632	1 167 590	1 707 679
Barley	1 281 335	—	—	—	1 281 335
Fuel oil	109 869	—	850 646	—	960 515
Pulpwood	446 968	—	1 011 375	35 066	1 493 409
Rapeseed	1 132 688	—	—	—	1 132 688
Containerized freight	657 804	466 363	—	—	1 124 167
Salt	—	412 775	34 495	—	447 270
Gasoline	39 511	—	379 984	—	419 495
Pulp	818 632	3 781	7 684	158 529	988 626
Cement	65 887	109 890	7 478	59 613	242 868
Newsprint	12 935	—	2 522	330 661	346 118
Inorganic chemicals	48 629	54 710	151 990	816	256 145
Limestone	261 251	—	16 459	283 172	560 882
Flaxseed	108 058	—	—	—	108 058
Asbestos	39 320	—	—	—	39 320
Waste and scrap	1 089	—	46 507	9 027	56 623
Building paper and board	818	863	7 907	—	9 588
Petroleum and coal products	201 289	—	10 069	—	211 358
Concentrated and complete feeds	—	5	—	—	5
Phosphate rock	16 493	781 711	—	—	798 204
Other commodities not listed	1 867 788	432 940	294 560	250 722	2 846 010
SEPT-ÎLES-POINTE-NOIRE	18 776 521	240 862	2 805 688	805 174	22 628 245
Iron ore and concentrates	18 716 983	—	1 833 741	—	20 550 724
Fuel oil	—	57 960	264	623 095	681 319
Bentonite	—	137 459	—	14 054	151 513
Other commodities not listed	59 538	45 443	971 683	168 025	1 244 689

15.24 Principal commodities in water-borne cargo loaded and unloaded at ports handling large tonnage in 1977 and 1978 (tonnes) (continued)

Year, port and commodity	International		Coastwise		Total
	Loaded	Unloaded	Loaded	Unloaded	
1978 (continued)					
PORT-CARTIER	16 052 049	3 167 854	427 681	2 041 398	21 688 982
Iron ore and concentrates	11 201 842	—	426 055	—	11 627 897
Wheat	2 593 898	963 469	—	1 691 857	5 249 224
Corn	1 971 346	1 939 597	—	34 093	3 945 036
Barley	10 441	25 521	—	7 548	43 510
Fuel oil	—	—	5	269 856	269 861
Other commodities not listed	274 522	239 267	1 621	38 044	553 454
THUNDER BAY	3 314 282	232 380	15 245 348	1 041 213	19 833 223
Wheat	119 142	—	9 293 633	—	9 412 775
Iron ore and concentrates	1 491 473	—	3 003 871	—	4 495 344
Barley	409 548	—	2 227 362	—	2 636 910
Oats	9 693	—	251 247	—	260 940
Rapeseed	129 194	—	—	—	129 194
Flaxseed	234 193	—	38 626	—	272 819
Fuel oil	—	—	—	331 548	331 548
Gasoline	—	—	—	181 635	181 635
Hulls, screenings and chaff	161 991	—	67 030	—	229 021
Newsprint	168 358	—	10 546	153	179 057
Rye	79 656	—	23 955	—	103 611
Concentrated and complete feeds	129 210	—	—	—	129 210
Other commodities not listed	381 824	232 380	329 078	527 877	1 471 159
MONTREAL	4 813 781	3 325 932	3 618 124	4 480 160	16 237 997
Fuel oil	897 375	621 287	2 112 858	729 488	4 361 008
Wheat	949 848	33 592	7 257	1 485 478	2 476 175
Containerized freight	1 110 627	1 139 272	—	—	2 249 899
Gasoline	34 163	—	1 064 556	99 462	1 198 181
Crude petroleum	—	—	—	—	—
Salt	—	141 591	3 370	459 622	604 583
Cement	89 855	—	12 616	—	102 471
Gypsum	—	—	—	499 802	499 802
Raw sugar	—	312 098	—	—	312 098
Barley	441 265	—	2 722	771 472	1 215 459
Corn	161 792	72 698	—	142 734	377 224
Organic chemicals	—	—	1 021	4 825	5 846
Coal, bituminous	—	—	—	—	—
Petroleum and coal products	256	8	8 877	138 880	148 021
Structural shapes	22 314	89 431	14 804	85	126 634
Lubricating oil and grease	303	—	123 313	8	123 624
Machinery	22 369	8 703	24 500	4 285	59 857
Manganese ore	5 080	222 926	—	—	228 006
Plate and sheet steel	36 820	48 763	3 146	17	88 746
Molasses, crude	—	59 220	—	—	59 220
Bars and rods, steel	9 909	11 051	2 367	—	23 327
Other commodities not listed	1 031 805	565 292	236 717	144 002	1 977 816
QUEBEC	3 873 664	4 218 540	1 610 874	3 977 921	13 680 999
Crude petroleum	—	3 187 459	48 805	—	3 236 264
Fuel oil	260 202	267 996	1 396 899	497 041	2 422 138
Wheat	1 944 633	—	—	1 931 261	3 875 894
Barley	433 798	—	—	673 656	1 107 454
Containerized freight	290 082	288 814	—	—	578 896
Gasoline	44 598	—	55 713	525 607	625 918
Zinc ore and concentrates	360 279	—	—	—	360 279
Pulpwood	—	—	—	—	—
Corn	38 533	119 137	—	87 731	245 401
Alumina and bauxite ores	—	—	—	—	—
Newsprint	58 827	—	—	54	58 881
Salt	—	—	—	142 940	142 940
Asbestos	3 882	—	—	—	3 882
Other commodities not listed	438 830	355 134	109 457	119 631	1 023 052
HAMILTON	1 853 318	6 980 371	365 375	5 480 848	13 011 912
Iron ore and concentrates	1 9841	2 970 374	—	4 226 513	7 216 728
Coal, bituminous	—	—	—	839 966	839 966
Fuel oil	—	—	35 176	281 165	316 341
Plate and sheet steel	49 368	22 675	148 471	10 668	231 182
Sand and gravel	—	168 723	—	—	168 723
Soybeans	—	61 323	—	—	61 323
Other commodities not listed	116 109	3 757 276	181 728	122 536	4 177 649
HALIFAX	3 691 025	4 440 818	2 226 864	657 200	11 015 907
Crude petroleum	—	3 461 277	—	—	3 461 277
Gypsum	1 972 461	—	180 394	—	2 152 855
Fuel oil	74 585	—	1 299 782	343 862	1 718 229
Containerized freight	987 397	858 175	—	—	1 845 572
Gasoline	24 151	1 445	688 130	139 628	853 354
Wheat	243 515	—	—	94 647	338 162
Other commodities not listed	388 916	119 921	58 558	79 063	646 458
SAINT JOHN	3 405 704	6 670 897	1 741 250	723 588	12 541 439
Crude petroleum	—	5 990 100	—	—	5 990 100
Fuel oil	979 693	—	1 182 325	534 278	2 696 296
Gasoline	398 306	—	558 925	178 173	1 135 404
Wheat	335 070	—	—	—	335 070
Containerized freight	654 025	386 646	—	—	1 040 671
Raw sugar	—	173 178	—	—	173 178
Pulp	323 354	—	—	—	323 354
Wheat flour	120 075	—	—	—	120 075
Newsprint	184 475	—	—	—	184 475
Other commodities not listed	410 706	120 973	—	11 137	542 816

15.24 Principal commodities in water-borne cargo loaded and unloaded at ports handling large tonnage in 1977 and 1978 (tonnes) (continued)

Year, port and commodity	International		Coastwise		Total
	Loaded	Unloaded	Loaded	Unloaded	
1978 (continued)					
SARNIA	1 366 965	3 580 601	3 159 221	316 227	8 423 014
Coal, bituminous	—	2 820 846	—	75 484	2 896 330
Fuel oil	938 861	—	1 638 377	20 412	2 597 650
Gasoline	—	—	922 105	4 248	926 353
Limestone	—	605 280	—	—	605 280
Wheat	—	—	138 159	90 042	228 201
Petroleum coal products	17 852	48 096	14 412	2 026	82 386
Inorganic chemicals	5 023	34 585	240 234	—	279 842
Lubricating oil and grease	—	—	9 752	114 632	124 384
Organic chemicals	379 556	—	4 825	5 559	389 940
Other commodities not listed	25 673	71 794	191 357	3 824	292 648
BAIE-COMEAU	3 344 067	1 564 722	194 587	2 258 364	7 361 740
Wheat	2 086 982	641 970	—	1 366 503	4 095 455
Barley	348 875	—	—	353 905	702 780
Newsprint	233 247	—	139 063	—	372 310
Alumina and bauxite ores	—	283 830	—	—	283 830
Fuel oil	—	—	1 843	200 849	202 692
Corn	381 836	214 793	—	218 834	815 463
Soybeans	268 072	293 647	—	46 613	608 332
Aluminum	15 955	—	50 742	—	66 697
Other commodities not listed	9 100	130 482	2 939	71 660	214 181
PORT HAWKESBURY	1 279 375	2 733 016	1 482 449	59 144	5 553 984
Crude petroleum	395 850	2 727 316	—	—	3 123 166
Fuel oil	62 712	—	1 180 389	57 547	1 300 648
Gypsum	687 124	—	—	—	687 124
Petroleum and coal products	—	—	54 918	182	55 100
Gasoline	27	—	244 750	1 415	246 192
Other commodities not listed	133 662	5 700	2 392	—	141 754
SAULT STE MARIE	140 940	3 719 243	177 514	1 773 483	5 811 180
Coal, bituminous	—	1 665 934	—	—	1 665 934
Iron ore and concentrates	—	1 311 943	—	1 269 252	2 581 195
Limestone	—	706 041	—	—	706 041
Fuel oil	—	4 136	—	342 356	346 492
Plate and sheet steel	7 834	—	42 087	—	49 921
Gasoline	—	—	—	136 433	136 433
Other commodities not listed	133 106	31 189	135 427	25 442	325 164
SOREL	2 533 387	416 451	22 022	3 364 401	6 336 261
Titanium ore	—	—	—	2 059 439	2 059 439
Wheat	1 209 750	25 975	13 182	1 205 161	2 454 068
Slag, drosses, byproducts	664 352	—	—	—	664 352
Pig iron	496 399	—	8 833	—	505 232
Coal	—	247 294	—	—	247 294
Barley	—	—	—	25 906	25 906
Corn	93 303	95 190	—	20 836	209 329
Fuel oil	—	—	—	28 074	28 074
Other commodities not listed	69 583	47 992	7	24 985	142 567
NANTICOKE	—	3 271 110	19 058	76 190	3 366 358
Coal, bituminous	—	3 271 110	—	—	3 271 110
Other commodities not listed	—	—	19 058	76 190	95 248
TROIS-RIVIÈRES	1 260 386	902 460	1 599	1 083 860	3 248 305
Wheat	744 245	279 048	1 599	517 029	1 541 921
Fuel oil	—	45 952	—	380 052	426 004
Barley	—	22 329	—	54 239	76 568
Pulpwood	—	—	—	—	—
Newsprint	205 249	—	—	—	205 249
Salt	—	7 128	—	42 264	49 392
Other commodities not listed	310 892	548 003	—	90 276	949 171
VICTORIA	621 565	68 631	1 391 916	426 091	2 508 203
Wheat	—	—	—	2 020	2 020
Logs	6 567	18 658	63 194	50 349	138 768
Sand and gravel	231 541	—	1 091 486	1 702	1 324 729
Lumber and timber	278 641	515	107 666	4 906	391 728
Cement	48 707	2 003	—	18 923	69 633
Gasoline	—	—	442	114 483	114 925
Fuel oil	—	—	1 564	149 867	151 431
Other commodities not listed	56 109	47 455	127 564	83 841	314 969
WINDSOR	1 070 073	945 162	495 846	546 763	3 057 844
Salt	925 645	—	431 488	—	1 357 133
Gasoline	—	—	—	236 571	236 571
Fuel oil	30 772	—	—	161 606	192 378
Plate and sheet steel	—	33 561	—	21 658	55 219
Limestone	—	654 639	—	—	654 639
Other commodities not listed	113 656	256 962	64 358	126 928	561 904

15.24 Principal commodities in water-borne cargo loaded and unloaded at ports handling large tonnage in 1977 and 1978 (tonnes) (concluded)

Year, port and commodity	International		Coastwise		Total
	Loaded	Unloaded	Loaded	Unloaded	
1978 (concluded)					
TORONTO	141 620	957 223	275 036	1 187 750	2 561 629
Fuel oil	—	—	209 344	186 267	395 611
Coal, bituminous	—	51 299	—	—	51 299
Cement	—	—	—	465 164	465 164
Wheat	—	—	11 975	180 681	192 656
Salt	—	188 886	—	113 672	302 558
Raw sugar	—	178 937	—	—	178 937
Soybeans	—	258 617	—	2 325	260 942
Barley	—	—	—	83 951	83 951
Other commodities not listed	141 620	279 484	53 717	155 690	630 511
NEW WESTMINSTER	1 100 555	551 376	501 652	2 104 281	4 257 864
Sand and gravel	—	75 659	11 285	818 984	905 928
Logs	974	8 314	45 695	484 467	539 450
Pulpwood	614 508	—	322 415	—	936 923
Lumber and timber	164 744	15	33 531	165 886	364 176
Cement	25 844	—	10 793	189 941	226 578
Pulp	6 083	—	—	14 967	21 050
Other commodities not listed	288 402	467 388	77 933	430 036	1 263 759

^aIncludes Roberts Bank.

15.25 Vessels and tonnage handled by harbours administered by the National Harbours Board,¹ 1977 and 1978

Port or elevator	Year	Vessel arrivals		Cargo handled tonnes	Grain elevator shipments tonnes ^f
		No.	Gross registered tons ^a ('000)		
St. John's, Nfld.	1977	1,274	2,786	924 398 ^f	—
	1978	1,626	3,418	995 924	—
Halifax	1977	2,109	17,767	14 027 017	588 577 ^e
	1978	2,252	18,829	14 063 809	417 951
Saint John, NB	1977	1,848	21,310	8 396 475	506 824
	1978	1,861	21,486	12 561 651	339 910
Belledune, NB	1977	30	269	232 038 ^f	—
	1978	41	379	362 954	—
Sept-Îles	1977	1,514	22,021	32 447 271	—
	1978	1,067	16,146	22 760 319	—
Chicoutimi	1977	126	500	640 990 ^f	—
	1978	131	571	708 149	—
Baie-des-Ha! Ha!	1977	393	3,548	4 240 322 ^f	—
	1978	306	3,382	3 759 781	—
Quebec	1977	1,535	13,922	15 316 436 ^f	4 682 857 ^e
	1978	1,631	14,649	15 325 110	5 372 800
Trois-Rivières	1977	507	3,605	2 663 254	1 435 319 ^e
	1978	513	5,261	2 993 153	2 175 339
Montreal	1977	4,363	39,367	19 809 226 ^f	4 550 717
	1978	4,440	44,198	20 385 720	4 467 199
Prescott	1977	99	793	511 960 ^f	369 710
	1978	64	572	311 910	178 431
Port Colborne	1977	35	232	295 643 ^f	295 643
	1978	17	139	162 374	162 374
Churchill	1977	61	606	815 951	755 244
	1978	41	458	600 233	542 697
Vancouver	1977	22,746	87,720	42 736 810	6 837 423
	1978	21,962	93,389	45 210 308	7 740 080
Prince Rupert	1977	1,406	3,053	1 137 783	424 490 ^e
	1978	1,500	4,750	1 973 536	1 077 369
Total	1977	38,046	217,499 ^f	144 195 574 ^f	20 446 804 ^e
	1978	37,452	227,627	142 174 931	22 474 150

¹National Harbours Board data may differ in some instances from data in Tables 15.23 and 15.24, due to some differences in physical definitions of the ports, and to the use in some cases of different source documents.

^fThe capacity of the spaces within the hull, and the enclosed spaces above the deck, available for cargo and passengers, including spaces used for the accommodation of officers and crew, navigation, propelling machinery and fuel. A registered ton is equivalent to 100 cu ft and it is expected that this internationally recognized measure, like the nautical mile and the knot, will continue in use for some considerable time.

15.26 Summary statistics of St. Lawrence Seaway traffic, 1978

Traffic and selected commodities	Montreal-Lake Ontario section			Welland Canal section		
	Cargo and revenue	%	Percentage change 1977	Cargo and revenue	%	Percentage change 1977
Cargo tonnes by toll classification	56 942 680	100.0	-0.9	65 670 992	100.0	+0.9
Bulk, n.e.s.	24 475 763	43.0	-17.6	32 538 514	49.6	-11.3
Grains	27 736 129	48.7	+28.4	28 915 882	44.0	+26.8
Government aid	129 095	0.2	—	128 945	0.2	—
Containers	271 485	0.5	-29.7	198 747	0.3	-36.1
General cargo	4 330 208	7.6	-25.0	3 888 904	5.9	-26.5
Traffic revenue (\$) by toll classification	33,211,023	100.0	+7.9	18,291,307	100.0	—
Bulk, n.e.s.	12,069,904	36.3	—	6,265,378	34.3	—
Grains	11,371,813	34.2	—	5,744,015	31.4	—
Government aid	52,929	0.2	—	25,789	0.1	—
Containers	182,583	0.6	—	61,612	0.3	—
General cargo	5,465,001	16.5	—	1,088,572	6.0	—
Gross registered tonnage	4,061,063	12.2	—	5,094,839	27.8	—
Other	7,730	—	—	11,102	0.1	—
Gross registered tonnage	58 752 816	100.0	+8.4	74 039 335	100.0	+12.7
Cargo vessels	58 528 991	99.6	+8.4	73 874 623	99.8	+12.5
Non-cargo vessels	223 825	0.4	+4.6	164 712	0.2	-4.7
Vessel transits	5,346	100.0	-3.1	6,626	100.0	+6.5
Loaded cargo vessels	3,994	74.7	-4.6	4,587	69.2	-1.1
Ballast cargo vessels	1,086	20.3	+34.2	1,799	27.2	+39.5
Non-cargo	182	3.4	-4.7	219	3.3	-5.6
Non-toll	84	1.6	-74.6	21	0.3	-65.6
	Tonnes			Tonnes		
Agricultural products	27 885 242	49.0	+27.8	29 012 903	44.2	+26.4
Wheat	14 050 681	24.7	+22.3	14 465 626	22.0	+21.9
Corn	6 454 239	11.3	+68.0	6 653 523	10.2	+62.8
Rye	82 298	0.1	+17.1	83 647	0.1	+19.0
Oats	270 960	0.5	-48.7	307 107	0.5	-45.7
Barley	2 533 010	4.5	-11.4	2 643 706	4.0	-11.3
Soybeans	2 201 723	3.9	+59.7	2 575 443	3.9	+50.2
Flaxseed	244 521	0.4	+9.1	278 229	0.4	+6.4
Other grains	1 898 697	3.3	+55.6	1 908 601	3.0	+51.8
Total grains	27 736 129	48.8	+28.4	28 915 882	44.1	+26.8
Other agricultural products	149 113	0.3	-28.4	97 021	0.1	-36.8
Mine products	19 084 040	33.5	-23.8	27 548 104	41.9	-15.4
Iron ore	13 542 178	23.8	-33.0	15 679 922	23.9	-21.3
Coal	940 399	1.7	+45.8	5 408 206	8.2	-19.7
Coke	2 486 639	4.3	+22.7	2 525 771	3.8	+20.2
Stone, ground, crushed, or rough	110 586	0.2	+12.8	1 321 206	2.0	+30.4
Salt	746 982	1.3	-4.7	1 386 969	2.1	-6.9
Other mine products	1 257 256	2.2	-1.4	1 226 030	1.9	-5.3
Processed products	9 631 369	16.9	-6.0	8 633 793	13.2	-4.8
Iron and steel	3 639 653	6.4	-22.1	3 444 989	5.3	-23.0
Fuel oil	1 887 976	3.3	-6.3	910 793	1.4	-4.9
Other petroleum products	481 735	0.8	+205.4	386 983	0.6	+246.7
Chemicals	629 904	1.1	+33.5	585 740	0.9	+30.0
Other processed products	2 992 101	5.3	+2.1	3 305 288	5.0	+7.5
Miscellaneous cargo	342 029	0.6	-5.0	476 192	0.7	-2.0
Forest products	118 074	0.2	+19.2	71 844	0.1	+51.4
Animal products	182 675	0.3	-20.0	151 980	0.2	-25.2
Package freight	41 280	0.1	+26.4	252 368	0.4	+7.3
Total	56 942 680	100.0	-0.9	65 670 992	100.0	+0.9

15.27 Aircraft movements by class of operation at airports with Department of Transport air traffic control towers, 1974-78

Operation	1974	1975	1976	1977	1978
Local operations ¹	3,153,170	3,404,782	3,448,856	3,461,125	3,453,938
Itinerant operations ²	2,539,541	2,993,399	3,038,271	3,227,647	3,408,224
Total, movements	5,692,711	6,398,181	6,487,127	6,688,772	6,862,162
Number of towers	57	60	60	59	60

¹Landings or take-offs by aircraft that remain at all times within the tower control zone.²Landings or take-offs by aircraft that enter or leave the tower control zone.

15.28 Summary statistics¹ of commercial air services, 1971 and 1975-77

Item	1971	1975	1976	1977
Canadian carriers, revenue traffic only				
Unit toll transportation ²				
Departures	'000 428	578	591	604
Hours flown	" 506	641	630	629
Kilometres flown	" 254 215	331 761	326 777	319 460
Passengers carried	" 11,082	17,697	17,931	18,829
Passenger-kilometres	" 15 387 669	25 189 055	26 169 729	27 551 209
Cargo and excess baggage				
tonne-kilometres	" 416 463	541 769	572 034	559 412
Mail tonne-kilometres	" 71 102	94 301	114 998	122 254
Cargo and excess baggage	'000 t 154	199	202	203
Mail carried	" 35	45	56	58
Bulk transportation ³				
Departures	'000 439	472	508	591
Hours flown	" 545	705	700	791
Kilometres flown	" 94 465	127 193	133 215	154 409
Passengers carried	" 1,402	2,414	2,653	3,105
Passenger-kilometres	" 3 123 922	6 322 821	6 595 275	7 975 451
Goods tonne-kilometres	" 70 244	137 798	93 174	104 364
Freight carried	'000 t 112	153	129	177
Other flying services ⁴				
Hours flown	'000 182	268	256	278
Canadian carriers, all services				
Revenue traffic				
Departures	'000 867	1,050	1,099	1,195
Hours flown	" 1,233	1,614	1,586	1,698
Kilometres flown	" 348 680	458 954	459 994	473 869
Passengers carried	" 12,484	20,111	20,585	21,934
Passenger-kilometres	" 18 511 590	31 511 876	32 765 005	35 526 660
Goods tonne-kilometres	" 557 809	773 868	780 205	786 030
Goods carried	'000 t 301	397	387	438
Non-revenue traffic				
Hours flown	'000 40	53	46	47
Passenger-kilometres	" ..	..	..	..
Goods tonne-kilometres	" ..	..	..	..
Fuel consumed	'000 l 2 363 062	3 429 275	3 372 837	3 367 108
Oil consumed	" 1 591	1 837	1 741	1 668
Average employees	'000 30	40	40	39
Salaries and wages paid	\$'000 304,209	603,691	669,971	739,831
Operating revenues	" 884,404	1,833,207	1,991,338	2,279,073
Operating expenses	" 827,794	1,766,705	1,935,883	2,135,038
Canadian and scheduled foreign carriers, all services				
Hours flown	'000 1,265	1,649	1,623	1,735
Kilometres flown	" 367 668	480 135	481 133	497 139
Passengers carried	" 15,723	25,245	26,234	28,047
Goods carried	'000 t 362	490	494	552

This table includes data for Levels I-IV carriers only.

¹Although most figures in this table have been taken from the audited reports of commercial air carriers, some preliminary figures have been used.

²Transportation of passengers or goods at a toll per unit.

³Transportation of passengers or goods at a toll per kilometre or per hour for the entire aircraft.

⁴Comprises activities such as flying training, aerial photography, and aerial advertising.

15.29 Comparative statistics of domestic and international air traffic, 1976 and 1977

Year and item	Canadian airlines		Scheduled foreign airlines		Total
	Domestic services	International services	United States ¹	Other foreign ¹	
1976					
Unit toll transportation ² , revenue traffic only					
Departures	'000	532	59		
Hours flown	"	477	153	17	19
Kilometres flown	"	223 675	103 104	9 782	10 699
Passengers carried	"	13 815	4 116	4 016	1 439
Passenger-kilometres	"	14 256 944	11 912 786	505 857	1 296 945
Goods tonne-kilometres	"	324 761	362 271	6 627	52 995
Goods carried	'000 kg	176 277	81 671	45 221	60 689
Bulk transportation ³ , revenue traffic only					
Departures	'000	487	21		
Hours flown	"	631	69		1
Kilometres flown	"	84 964	48 253	171	486
Passengers carried	"	1 065	1 589	46	149
Passenger-kilometres	"	231 485	6 363 790	11 022	96 118
Goods tonne-kilometres	"	59 336	33 837		1 784
Freight carried	'000 kg	123 336	5 464		669

15.29 Comparative statistics of domestic and international air traffic, 1976 and 1977 (concluded)

Year and item	Canadian airlines		Scheduled foreign airlines		Total
	Domestic services	International services	United States ¹	Other foreign ¹	
1977					
Unit toll transportation ² , revenue traffic only					
Departures	'000	551	53	..	..
Hours flown	"	485	144	18	17
Kilometres flown	"	222 095	97 365	11 006	11 279
Passengers carried	"	14 483	4 346	4 525	1 426
Passenger-kilometres	"	14 592 270	12 958 939	658 877	1 249 647
Goods tonne-kilometres	"	322 795	358 871	8 861	55 738
Goods carried	'000 kg	183 549	77 192	50 844	63 217
Bulk transportation ³ , revenue traffic only					
Departures	'000	568	23	..	..
Hours flown	"	716	75	..	1
Kilometres flown	"	102 848	51 561	279	706
Passengers carried	"	1 267	1 838	58	104
Passenger-kilometres	"	395 107	7 580 344	18 132	98 099
Goods tonne-kilometres	"	71 572	32 792	14	85
Freight carried	'000 kg	170 678	6 133	21	314

¹Hours and kilometres flown are those flown only over Canada.²Transportation of passengers or goods at a toll per unit.³Transportation of passengers or goods at a toll per kilometre or per hour for the entire aircraft.

Sources

15.1 Water Transportation Assistance Directorate, Public Affairs, Transport Canada.

15.2 - 15.13, 15.15 - 15.24 Transportation and Communications Division, Economic Statistics Branch, Statistics Canada.

15.14 Respective provincial government departments.

15.25 National Harbours Board.

15.26 St. Lawrence Seaway Authority.

15.27 - 15.29 Transportation and Communications Division, Economic Statistics Branch, Statistics Canada.

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Telecommunications

16.1

A technological revolution has descended upon the Canadian telecommunications system, and that revolution may transform, not only telecommunications proper, but Canadian society itself. Canada, in common with other industrialized countries, is in the midst of a revolution brought on by the meshing of communications and computers in ways that have transformed signals, systems and carriers. With lasers, fibre optics, micro-computers and generations of high-powered satellites, it is becoming possible to provide almost universal access to all the new computer-based information services. Such major changes in the technology of information-handling are bound to have revolutionary impact, not only on social structures, but on the nature and meaning of individual lives.

These technological advances affect the terminal, switching and transmission equipment used in telecommunications. In the case of terminal and switching equipment, it is the emergence of a new generation of small, inexpensive computers with enormous capabilities. Voice, visual and data communications are already being sent in digital rather than analog form because the former is cheaper, faster and more accurate. Even now, the telephone companies are moving to electronic switches which are little more than durable computers complete with memories and other features. In October 1978, the Science Council of Canada in *Communications and computers: information and Canadian society*, pointed out that the cost per byte (binary digit) of random access memory has declined an average of 35% a year since 1970, when the major growth in the adoption of semi-conduction memory elements began. Canada is moving into an era when it will cost less to buy a micro-processor than to fill a car with gasoline. According to the federal Department of Communications (DOC), this drop in hardware costs will bring about a host of new business and home computer applications including, in particular, the possible introduction to every home and business of two-way TV systems comprised of a computer terminal attached to an ordinary TV set. Two-way TV will render possible in the 1980s the general use of such hitherto futuristic services as electronic mail, teleshopping, electronic banking, remote sensing and security services, teleconferencing, computer-conferencing and information-retrieval from data banks all over Canada and the world. Already some of these are in commercial use, and trials are proceeding with the rest. Canada has developed two such systems.

New technologies will also soon enable telecommunications transmission systems to carry much more information at far less cost. For example, the traditional copper cables carrying electrical pulses have been replaced by hair-thin optical fibres at national defence headquarters in Ottawa. The science council, in its 1978 position paper on communications and computers, pointed out that fibre optics are proven and tests for durability and reliability in everyday working conditions are under way. These high capacity glass fibres carry light signals and are immune to electrical interference. By using high-frequency light (laser), 10,000 times more information can be carried on glass fibres the thickness of a hair than on regular telephone copper wires. In fact a 200-TV-channel capacity could be developed if there were enough software or programs to make use of them. DOC officials predict that in the 1980s optical fibres will start replacing the copper cable used in telephone and cable-TV transmission systems.

Communications satellite technology, in which Canada is a world leader, has also undergone significant evolution. At present, satellites act rather like huge microwave towers in the sky and are used for long-distance voice, video and data communication. Until the launch in January 1976 of the experimental Canadian-American communications technology satellite, later named Hermes, these satellites were essentially low-power, so that large, expensive earth stations or antennas were needed to pick up satellite signals. According to the science council, the significance of Hermes and its

successors seems to be that long-distance communications will be conducted by high-powered satellites using relatively inexpensive low-powered ground stations. Low-powered parabolic dish receivers designed to sell for under \$200 are already being introduced in Japan. In the near future, community antennas or receivers on home rooftops may be able to pick up satellite signals directly. Satellite transmission costs from Montreal to Toronto are the same as from Montreal to Vancouver, abolishing distance as a meaningful concept in telecommunications.

The success of Canada in taking full advantage of the new information technologies, and avoiding dependence on imports with a consequent loss of industry and jobs, depends in part upon the capabilities of the Canadian telecommunications system. That system, built to hold the country together over vast distances and formidable geographic barriers, is among the most extensive and sophisticated in the world. But the components of this system — the telecommunications carriers, the broadcasters, the cable-TV operators and others — are beginning to wonder what their

Fibre optics, hair-like glass strands that carry many times more information than conventional copper cables, can convey many forms of communications — telephone, radio, television and data communications.

future roles will be. To respond to this uncertainty and suggest a future strategy, in November 1978 the federal minister of communications appointed a consultative committee on the implications of telecommunications for Canadian sovereignty. The committee, in its March 1979 report, *Telecommunications and Canada*, stated that it is no longer possible, as it was 10 or 15 years ago, to distinguish between the technologies of telegraphy, telephony, radiocommunication and computers. All are used in almost every mode of telecommunication, either in combination or in competition, thus undermining the structure of communications that developed over the last 130 years.

16.2 Telecommunications carriers

Canada's telecommunications carriers own and operate a large proportion of the vast Canadian telecommunications network. They are required by law to continue carrying their user calls, messages and other information at a reasonable cost without changing their contents. With \$17 billion invested in plant, the industry is expanding at a rate of more than \$2 billion a year. Investment for 1978 was almost \$2.9 billion, a figure expected to reach \$4 billion a year by 1985. The industry anticipated that its capital investments would add up to \$60 billion by 1990. Much of this money would be spent on development and deployment of the new information technologies.

The Canadian Telecommunications Carriers Association (CTCA), established in 1972, provides the framework for co-operation on an industry-wide basis between major telecommunications carriers. The association consists of 20 telecommunications carriers, each represented on the board of directors. It brings together in one organization the TransCanada Telephone System (TCTS) and its 10 members, the Canadian Independent Telephone Association (CITA), six other telephone companies, Canadian National and Canadian Pacific Telecommunications and Teleglobe Canada.

The CTCA speaks to government on behalf of its members. In a brief presented in January 1979 to the committee on the implications of telecommunications, CTCA described the ferment brought about by the new information technologies among the major players on the communications stage — broadcasters, common carriers, cable television, federal and provincial governments and regulators. In what might be described as a series of debates, written and verbal, public and private, in and out of the courts, they were trying to arrive at some semblance of consensus on each of many policy questions that had arisen as new technologies emerged, bringing with them new markets, new opportunities and new threats to existing interests.

The CTCA is active in affairs of the Geneva-based International Telecommunication Union and attempts to secure, along with the federal communications department, the compatibility of the Canadian telecommunications system with those of other countries. Among the matters studied there have been numbering plans for telephone, telex, new data networks and maritime mobile services, as well as tariff procedures, revenue settlement methods, human factor aspects of equipment design, and international arrangements for radio and television program transmission, new data networks and new services. One new service discussed was two-way TV.

Voice communications

16.2.1

Telephony. In 1978, there were some 15 million telephones and 23 million kilometres of circuits owned and operated by the more than 300 telephone companies in Canada. Each company is responsible for service in its own territory and for integrating its facilities with those of all other telephone organizations. Collectively, these companies operate the world's longest microwave system and have access to Canada's satellite system for the transmission of long-distance calls.

For a basic monthly charge most telephone users can place as many calls as they wish in a defined area and talk as long as they like. With the expansion of major cities and the merging of small towns into larger communities, most telephone companies have introduced extended area service which enables customers to place calls in a much wider area without paying long-distance rates. For this service, the customer pays a slightly higher fee, based on the number of telephones within his extended area.

For long-distance calls the telephone network operates automatically, providing switching and alternative routing. If the most direct line is busy or out of order, automatic equipment instantly tries several alternative routes until a free or operating one is found.

The Canadian telephone system can also reach nearly all the world's 400 million telephones through the integrated North American telephone network and Teleglobe Canada, a federal Crown corporation charged with providing Canadians with the full range of international telecommunications services. During 1977-78, Canadians spent 88.4 million minutes (more than 1.47 million hours) on the phone to other countries, an increase of 21% over the previous year.

In co-operation with the TransCanada Telephone System (TCTS), a consortium of the nine major Canadian telephone companies and Telesat Canada, in September 1976 Teleglobe Canada introduced direct dialing to a host of countries outside North America. By 1980-81, the Crown corporation expects that 85% of Canadian subscribers will be able to dial direct to the United Kingdom, continental Europe, the Caribbean, Japan, Australia and New Zealand.

The new information technologies are already affecting the Canadian telephone network. For example, thanks to advances in integrated-circuit technology, electronic telephone sets have been introduced in many Canadian homes and offices, representing one of the most radical changes in design since the telephone was invented.

The original step-by-step switching equipment which uses a number of separate switches to complete each call is gradually being supplanted by the new computer technology. New crossbar and stored program control electronic switching systems can handle calls faster and more economically. Digital multiplex switching is a relatively new technology expected to play an important part in future network development.

The revolutionary new fibre optics transmission technology is already being tested in the field. In February 1979, DOC and CTCA signed an agreement to conduct a joint \$6.1 million field trial over the following five years in the small Manitoba town of Elie. The first Canadian test in actual field conditions began in October 1977 when Bell Canada and its subsidiary, Bell Northern Research, installed underground a 1.42-km fibre optics line between two switching centres in Montreal. In December 1978, Bell Canada inaugurated a second field trial in Yorkville, Toronto, the first in which fibre optics was used for residence telephones. Between 1980 and 1982, Bell Canada expects the technological development and systems economics of fibre optics will justify its widespread use in transmission systems within metropolitan areas.

These developments are being closely watched by TCTS, the basic vehicle for co-operation among the nine major Canadian telephone companies which control about 95% of the telephones in Canada. The telephone companies in this consortium are: Alberta Government Telephones, British Columbia Telephone Co., Bell Canada, the Island Telephone Co. Ltd., Manitoba Telephone System, Maritime Telegraph and Telephone Co. Ltd., the New Brunswick Telephone Co. Ltd., Newfoundland Telephone Co. Ltd. and Saskatchewan Telecommunications. A tenth TCTS member is Telesat Canada which provides the Canadian telephone system with access to Canada's domestic communications satellite system.

About a million telephones are provided by Edmonton telephones, Northern Telephone Ltd., Okanagan Telephone Co., Ontario Northland Communications, Québec-Téléphone, Télébec Ltée and Canadian National Telecommunications. The 300 or so other companies range in size down to a few with as little as a dozen subscribers. Many of these smaller companies belong to the Canadian Independent Telephone Association (CITA) which is determined to maintain its independence while providing the highest possible standard of service.

Ownership and regulation of Canada's telecommunications carriers varies. Most of the largest telephone systems in Canada are privately owned and operated. Such investor-owned companies include: Bell Canada, the British Columbia Telephone Co., Québec-Téléphone, Maritime Telegraph and Telephone Co. Ltd. and the New Brunswick Telephone Co. Ltd. The Island Telephone Co. Ltd., Newfoundland Telephone Co. Ltd., Northern Telephone Ltd. and Télébec Ltée, are subsidiaries of investor-owned telephone companies.

Other telephone systems are owned by federal, provincial and municipal governments. Canadian National Telecommunications is a federal Crown corporation and provides telephone service for residents in Yukon and the Northwest Territories, as well as parts of Newfoundland and northern sections of British Columbia. Alberta Government Telephones, Manitoba Telephone System and Saskatchewan Telecommunications are provincially owned corporations. Ontario Northland Communications, a division of Ontario Northland Transportation Commission, a provincially owned corporation, provides telephone and telegraph services in the northeastern part of Ontario. Edmonton telephones is the largest municipal system in Canada.

The federal Canadian Radio-television and Telecommunications Commission (CRTC) regulates the major investor-owned systems incorporated under federal

Canadians use more than 15 million telephones, an average of 64.3 for every 100 persons. More than 4 million are business phones and well over 10 million are residential.

legislation: Bell Canada and British Columbia Telephone Co., as well as CNCP Telecommunications. The remaining investor-owned systems are regulated by provincial agencies.

Telephone statistics. Tables 16.1 - 16.5 provide a summary of data on the use of telephones in Canada, including the number of systems, number of telephones, local and long-distance calls, revenues and provincial breakdowns.

16.2.2 Record communications

Public message service. CNCP Telecommunications, a joint venture of the telecommunications divisions of the Canadian National and Canadian Pacific railways, provides Canada's public message telegram service. The service is available in every Canadian province and territory. Messages can be forwarded or received from any point in Canada or throughout the world via the submarine cable and satellite facilities of Teleglobe Canada.

Public telegram volumes have gradually declined since 1956, while the use of telex and the Teletypewriter Exchange Service (TWX) has grown correspondingly. But the telegraphic services still respond to the need for messages relating to social activities, as well as to the needs of people who are not telex or TWX users. In some areas local telegraph offices have been closed because of the fall in business, and replaced by toll-free telephone service to the nearest area telegraph office.

In contrast to citizens of other countries, most Canadians tend to file messages at telegraph offices by telephone or telex. Only a small number of messages are filed in person at the counter.

The new information technologies have already invaded the telegraph office. Once a message is filed, it is entered directly into a mini-computer with the aid of a keyboard and visual-display unit. The mini-computer is used to edit the message and place it in the appropriate format. After indicators of its destination have been inserted, the message is released into store-and-forward computers. The message finally appears on a teleprinter terminal and is delivered by telephone, mail, telex or personal delivery.

Electronic mail has long been regarded as one of the services which the new information technologies would render possible. CNCP Telecommunications and the Canada Post Office have taken the first step in this direction with the introduction of a new service called Telepost. This service permits messages filed with CNCP to be transmitted to the postal centre nearest the addressee. The local mailman then delivers the message. This service is available across Canada and the United States.

The federal Canadian Radio-television and Telecommunications Commission (CRTC) regulates the operations of CNCP Telecommunications.

Telex and TWX. Each year, more than 3.8 million telex and TWX messages to overseas points are switched through the facilities of Teleglobe Canada. The total worldwide complex provides access to more than 800,000 subscribers.

Telex, the first North American dial-and-type teleprinter service, was introduced to Canada by CNCP Telecommunications in 1956. In April 1979 it had more than 41,000 customers and 130 exchanges across Canada. In 1978, it interconnected with about 110,000 telex teleprinter units in the United States, and about 500,000 units around the world. TWX, owned and operated by the TransCanada Telephone System, has some 5,100 subscribers in Canada with the capability to reach TWX users in the United States. An agreement between TCTS and Western Union Telegraph Co. enables Canadian TWX users to reach American TWX users.

Telex and TWX are now considered universal services. They are available to some 185 countries, half of them linked to Comtex, a computer-controlled exchange permitting subscriber-to-subscriber dialing without the assistance of an operator. Computerized switching integrates the Canadian domestic telegraph network with the overseas network. The switches can handle as many as 4,000 messages an hour.

Data communications and other new services

16.2.3

Data or computer-communications services are forerunners of the new telecommunications services which will be available in the mid-1980s when the new information technologies have entered the marketplace. At present most Canadian data communications services are provided by the two major national telecommunications carriers, TCTS and CNCP Telecommunications, to business, industry, government, educational institutions and other specialized users. These new information systems have become basic professional tools in many instances.

Data communications services are capable of handling vast amounts of information. These services represent one of the first and most significant marriages between computer and telecommunications technologies.

TCTS and CNCP compete vigorously for the growing data communications market. Both have introduced a number of competitive data services and terminal offerings on both leased (private) circuits and public switched networks, each capable of handling up to 56,000 bits of information a second. These services include computerized store-and-forward message systems and provision of many different teleprinter, facsimile and cathode ray tube terminal offerings.

A number of different transmission systems may be used. Many customers have private-line networks linking scattered or remote locations. Others employ pay-as-you-use data transmission services. Transmission speeds vary from less than 100 words a minute to the equivalent of 50,000 words a minute.

Computers and their terminals "talk" in digital language. In 1973 Canada became the first country to have its own nationwide commercial digital data networks. Digital transmission permits reduced costs by more efficient use of existing circuits and ensures improved accuracy, vital in high-speed data transfer.

Another major development was the introduction of digital circuit-switching and packet-switching systems in 1977. In packet switching, data are broken into small packets which are immediately shuttled through the available network facilities. One does not have to wait until there is transmission time available to send all the data at once.

In co-operation with the British Post Office, Teleglobe Canada inaugurated a Canada-United Kingdom data link in January 1976. In 1979-80, the Crown corporation anticipated the completion of a packet-switching link between the Canadian data networks and the packet-switched networks in England, France and Japan. In the same year, a circuit-switching link will tie the Canadian networks into the German and Scandinavian networks which use circuit-switching technology.

The data communications business is growing rapidly in Canada. For example, in 1978 Bell Canada's Dataroute recorded an annual increase of 33% in the number of customer circuits added to the network.

In 1978, CNCP Telecommunications asked the CRTC to require that Bell Canada permit CNCP to interconnect with the telephone company's local switched network. Bell Canada and the other TCTS members argued against this request. In May 1979, the CRTC decided in favour of CNCP, arguing that interconnection would enable CNCP to compete more equally with the telephone companies in the provision of data-communications services and that such competition would benefit Canadian users. Bell Canada appealed this decision to the Governor-in-Council in June 1979. In July, the Governor-in-Council decided to uphold the CRTC decision.

Videotex. Such new information technologies as two-way TV may bring the power of the computer into every Canadian home. They will also add another dimension to the intense competition for a share of the data communications market. The federal communications department has developed a two-way TV system called Telidon. Bell Canada has also developed its own two-way TV system — Vista. In co-operation with Southam Inc. and Torstar Corp., Bell Canada was testing this system in 1979. Users of the system are able to interact directly with computer-based information sources from their home or office, using a regular television set, which serves as the display for text and simple graphic information.

16.2.4 Telecommunication networks

Canadian telecommunication networks form a vast grid stretching across land and water from the East to West coasts, with branches north and south and extending into virtually every community. The networks consist of open wires, cables, microwave systems, the domestic communications satellite system and a vast array of different types of switching facilities. Their function is to link terminal devices, everything from telephones to computers, with a compatible terminal at the other end.

The backbone of this system is formed by Canada's three nation-spanning microwave networks. These networks consist of microwave stations about 50 km apart which relay radio signals, amplifying them along the way. In general, each microwave channel can carry more than 1,200 telegraph, data or telephone messages or, alternatively, one TV circuit. The TransCanada Telephone System (TCTS) owns and operates two of these networks. CNCP Telecommunications operates the third.

Terrestrial microwave systems are supplemented by the Anik satellite system of Telesat Canada, a TCTS member owned jointly by the federal government and the industry.

In November 1972 Telesat Canada launched Anik I, the first domestic commercial communications satellite in the world. A back-up, Anik II, was launched in April 1973

and another, Anik III, in May 1975. The lifespan of these Anik A satellites is expected to be seven years.

These satellites, locked in a geostationary orbit about 35 900 km above the equator, are comparable to enormous microwave towers. Signals sent to them can be relayed anywhere in Canada, and especially to areas too remote to be economically served by terrestrial networks.

Initial commercial service to Telesat customers began in January 1973 through a network of earth stations — facilities for picking up satellite signals and sending signals to satellites — strategically located across Canada. There are now about 100 earth stations in all parts of Canada.

In December 1978, Telesat Canada launched its Anik B satellite. This operates in the same 6/4 Gigahertz (GHz) band used by the Anik A satellites and will replace one of the latter in the Canadian commercial satellite network. Anik B will also send higher-powered beams on the 14/12 GHz band, and its four spot beams will cover virtually all of Canada. The federal communications department leased up to four 14/12 GHz channels for two years starting in early 1979, to continue exploring and developing new communications services by satellite.

Telesat Canada planned to launch its Anik C and Anik D series in the early 1980s. The Anik C series, operating in the 14/12 GHz band, will have four spot beams and provide heavy route (east-west) message services, TV distribution to cable head ends and other new commercial services. Because the 14/12 GHz band is reserved for satellites, there is no danger of interference with terrestrial networks. Earth terminals can therefore be located in urban centres. As a result, new satellite services will become available which simply were not possible with earlier satellites using the 6/4 GHz band.

The Anik D satellites will operate in the 6/4 GHz band and will cover all Canada with their signals. These satellites will take the place of the remaining Anik A satellites and provide new capacity in the 6/4 GHz band.

Teleglobe Canada provides the global connection for Canada's domestic telecommunications networks. There are two submarine cables across the Atlantic, with 80 and 1,840 circuits. Negotiations are proceeding for the construction of a third with over 4,000 circuits. One cable across the Pacific terminates in Canada, and discussions have been held for constructing a second.

Teleglobe Canada participates in INTELSAT, an international consortium which provides satellite communications between countries. INTELSAT has three satellites in orbit, and a fourth was scheduled for late 1979. Teleglobe Canada operates three ground stations, and decided to proceed with construction of a fourth. About 35% of Teleglobe Canada's traffic travels by satellite and the rest by submarine cable.

Telecommunications in the North

16.2.5

Anik is the Inuit word for brother, and Telesat Canada's Anik satellites have opened a new world of communication in the North. These satellites, able to reach easily into remote areas where surface systems encounter difficulties, have improved the efficiency and flexibility of existing telecommunications services in the North and have provided new and effective links with the populous South. They have also brought new services, including television broadcasting, into remote communities beyond the reach of terrestrial networks.

Some appreciation of the expansion in telecommunications services in the North is indicated by the growth in telephone service. Between 1967 and 1977 in the western part of Northwest Territories, the number of communities with local and long-distance facilities grew from 18 to 31. The number of telephones rose from 2,800 to 9,300, an increase of 300%, and the number of long-distance calls through the Hay River toll centre grew nearly 650%.

In the western Arctic, 93.9% of Canadian National Telecommunications subscribers can dial long distance directly. Before 1961, radios operated by business, government and missions constituted the only public communications service.

In January 1977, the communications department announced a northern communications assistance program, aimed at providing every community in the Northwest Territories with basic local and long-distance service by 1982. The federal

government expected to contribute \$9 million for facilities and Bell Canada and Canadian National Telecommunications were expected to commit a similar amount for local exchange equipment and operation of telephone circuits between communities.

CN Telecommunications provides service in Yukon and the Northwest Territories west of longitude 102° and in northern British Columbia, and by the end of 1978 had 62 telephone exchanges and 33,800 telephones in the area, as well as a digital switching network. The company planned to extend its digital switching network in 1979 and 1980, and to transfer its operations in this area to a wholly owned subsidiary, Northwest Telecommunications, Inc.

Bell Canada serves the eastern half of the Northwest Territories up to the Arctic Circle, as well as Northern Quebec. In the fiscal year 1978-79, the company installed seven new earth stations and added 39 satellite circuits to existing facilities, most of them in the Northwest Territories. Bell Canada has trained and employs some Inuit, and offers a telephone directory in Inuktitut, English and French.

Telecommunications statistics. Table 16.6 shows how the annual operating revenues of the carriers from their non-telephone telecommunications activities expanded between 1973 and 1978. During the same period, the annual telegram volume declined but the number of cablegrams, including wireless messages and transatlantic telex messages grew from 7.4 million in 1973 to more than 11.3 million in 1978. Money transfers also rose in the same period from almost \$42 million to nearly \$58.7 million.

16.3 Federal regulations and services

16.3.1 Department of Communications (DOC)

Establishment of the department in 1969 grew out of government awareness that communications policies, already affecting the lives of Canadians, would have an even more significant impact in the future. The department is responsible for ensuring that Canadians have the best possible access to a broad range of communications services and that these are provided at reasonable cost. With respect to the new information technologies, the department aims at their orderly development and introduction, particularly concerning their impact on social and cultural values and the quality of life, as well as on the economy.

The duties, powers and functions of the minister of communications include all matters relating to telecommunications over which the Parliament of Canada has jurisdiction, except those by law assigned to any other department, branch or agency of the federal government.

Policy. A continuing focus of the policy sector has been the far-reaching effects of the information revolution to be precipitated by the new information technologies. The department has been examining such issues as communications rights, including public access to these new services; the implications of omnipresent computerized information systems for personal privacy and the need to ensure they do not become a means of social control; the importance of ensuring that Canadian industry benefits from these new technologies; the impact of automation on the workplace with respect to employment and the quality of work; and the implications of the new technologies for federal and provincial jurisdictions over telecommunications. The department has been studying the way in which the roles of members of the Canadian telecommunications system — carriers, cable companies, broadcasters and others — should evolve under the impact of the new technologies; the implications of these technologies for the Canadian broadcasting system; and the possible threat to Canadian sovereignty posed by future depositing of vital Canadian business, social and political data in foreign data banks. Of particular concern are the social, economic, political and cultural consequences if Canada ended up as an importer of the new technologies, rather than developing them itself for domestic and world markets.

One area of concern has been the importation of terminal devices intended for public consumption and attachment to Canadian telecommunication networks, and the implications of this both for the economy and the integrity of Canadian telecommunica-

tions systems. The policy sector has been studying developments in Canada and abroad, but particularly in the United States, as a basis for policies which would assure Canadians telecommunications services of high quality and growing variety.

In its March 1979 report the committee on the implications of telecommunications for Canadian sovereignty pointed out that in 10 years the domestic market for electronic products increased by 181%, but shipments by Canadian firms increased by only 149%. The bulk of the market growth was captured by imports, which increased by 283%. The adverse trade balance in the sector as a whole had grown to nearly \$1.27 billion by 1976, and was estimated to approaching \$2 billion in 1979.

In April 1979, the federal government announced a \$115-million product development fund to provide grants for developing new high-technology products by Canadian manufacturers. Another \$50 million was set aside to assist the Canadian electronics industry over the next three years. Part of this money would be used to expand the enterprise development program of the industry, trade and commerce department which assists large-scale projects that would not otherwise be carried out in Canada. The rest would be used to encourage increased Canadian use and production of micro-electronic devices or integrated circuits, the major components of new low-cost computers.

The policy sector examined such issues as the introduction of pay-television in Canada, the feasibility of distributing televised proceedings of the House of Commons by satellite, the effects of television on children, the principle of separating institutional control over transmission facilities from the content being distributed, and the provision of special telecommunications services for the physically handicapped. The department also analyzed the effects of a 1976 income tax amendment which does not allow advertisers to claim as deductions the cost of advertising on American television stations to reach the Canadian market.

The policy sector plays a major role in co-ordinating planning for communications in the North. A priority is the need for more northern-produced and native-language programming on the northern service of the Canadian Broadcasting Corporation. The sector is examining the best way of ensuring efficient communications for oil exploration on the northern continental shelf, especially by satellite.

Space. The department's space sector plans and co-ordinates social and technology experiments using the Hermes and Anik B satellites.

Hermes, the most powerful communications satellite in orbit, was the result of a co-operative program between DOC and the US National Aeronautics and Space Administration (NASA). Canada designed and built the spacecraft; the United States launched it and provided additional testing and components. The satellite, launched in January 1976 for a planned two-year mission in geostationary orbit, has been controlled and operated by DOC. Communications experiments began in April 1976, with Canada and the United States sharing satellite time equally. Hermes exceeded its design lifetime of two years; because of the success of the experiments and the continued satisfactory operation of the satellite, the original mission was expanded to continue until November 1979. In Canada, major experiments have been conducted in telehealth, tele-education, advanced technology, community interaction, TV broadcasting and government services, by universities, hospitals, federal and provincial departments, native organizations and industry. These experiments involve the use of a large number of earth stations with antennas ranging from 3 m (metres) in diameter, for two-way television, voice and data, to 60 cm (centimetres) in diameter for television receive-only under selected conditions.

The Anik B program continues the exploration and development of new communications services by satellite. The Hermes program demonstrated the technical feasibility of such services using satellites, and created awareness among potential users. The program will test their commercial feasibility through carefully selected pilot projects. It was planned that these would normally be of extended duration and conducted, as far as possible, under operational conditions. A number of technical experiments were also planned. The Anik B pilot projects are expected to lead to new commercial services by the Anik C or Anik D satellites. The satellite capacity for the

program became available when Telesat Canada agreed to include in the Anik B satellite a 14/12 GHz transponder to be used by the federal government for experimental purposes. In 1977, DOC and Telesat signed a contract for a two-year lease to use the 14/12 GHz portion of the satellite starting in 1979, with an option for a further three years. The 14/12 GHz portion includes four regional beams and four transponders, and was built in large part by Canadian industry using technology developed in the Hermes program. The satellite was launched in December 1978, and became available for operational and experimental use in March 1979. DOC is responsible for overall co-ordination of the experimental program, and for communications support to the experiments, including provision of ground terminals to the participants; 17 projects were approved for the program.

Direct broadcast satellite systems are now being widely studied and advocated in several parts of the world. The DOC space sector has carried out studies, demonstrations and evaluations including development of 14/12 GHz satellite and earth station technology, and small earth terminals suitable for direct-to-home TV. In 1978-79 DOC completed advanced planning for a major TV pilot project using the Anik B satellite to broadcast signals directly to home or community antennas. This demonstration would involve about 100 community and home TV-receive terminals developed in Canadian industry.

The space sector studied the feasibility of and undertook planning for a multi-purpose UHF satellite system (MUSAT). This system would meet Canadian government requirements for reliable communications to land, air and sea-based mobile and transportable terminals. The department participated in a new search and rescue satellite project (SARSAT), a joint undertaking of Canada, the United States and France.

The department explored the possibility of co-operating with other countries in joint satellite ventures. Canada signed an agreement in December 1978 with the European Space Agency (ESA), involving Canada in the agency's long-term planning.

Much of the new satellite technology has been developed at the department's Communications Research Centre (CRC) near Ottawa. A large proportion of this technology is transferred to Canadian industry through contracts. Industry has access to the department's testing facilities at its David Florida Laboratory (DFL) also near Ottawa. This national facility for the integration, assembly and environmental testing of space components is being expanded to assemble and test complete satellites.

In 1977-78, the department's research sector was conducting 70 distinct research projects in six main areas: transmission and delivery systems, optical communications, space, rural and remote communications, northern communications and new home services.

Research. The research sector demonstrated in 1977-78 the first fully bi-directional fibre optics link — a significant advance in lowering network implementation costs. In 1979, three fibre optics field trials were proceeding in Canada. In Elie, Man. up to 150 homes would be linked up by optical fibres and receive for the first time single-party telephone service, multi-channel TV, FM radio and a variety of new home services.

In 1978, the department demonstrated Telidon, a two-way TV system developed by its researchers and acknowledged to be superior to any other such system in the world. In April 1979, the department committed \$9 million to a co-operative program with industry aimed at furthering the development of Telidon, with a view to mass marketing. In 1979, Bell Canada, Alberta Government Telephones, the Ontario Educational Communications Authority and at least three cable companies were participating in Telidon field trials. An independent study foresaw a domestic market of over 600,000 persons for Telidon by 1986.

Spectrum management and government telecommunications. The department's telecommunication regulatory service administers the Radio Act and overall management of the radio frequency spectrum. The service develops, reviews, and updates spectrum policies, regulations, procedures and guidelines. It issues radio station licences (for other than broadcasting stations); sets and conducts examinations for radio operators; regulates the use of radio frequencies; develops standards to control

interference with radio and television reception, as well as technical specifications; tests and approves telecommunication equipment for use in Canada and issues technical and operating certificates for broadcasting stations. Daily management of the radio frequency spectrum is conducted by offices in the Atlantic, Quebec, Ontario, central and Pacific administrative regions.

The department's government telecommunications agency is responsible for the overall co-ordination and planning of telecommunications services used by the federal government and its agencies.

Canadian Radio-television and Telecommunications Commission (CRTC) 16.3.2

The CRTC came into existence when the federal Broadcasting Act of 1968 was proclaimed. Then known as the Canadian Radio-Television Commission, it was responsible for regulating only radio and television broadcasting — including cable companies — except in their purely technical aspects.

In the early 1970s, there was a growing recognition in government that the new information technologies were bringing about a sharp convergence of telecommunications and broadcasting. Activities in one field could have a profound effect in the other. Parliament passed the Canadian Radio-television and Telecommunications Commission Act, effective April 1, 1976. The commission became the Canadian Radio-television and Telecommunications Commission and was given regulatory power over certain telecommunications carriers. This power had previously belonged to the Canadian Transport Commission. Telephone and telegraph companies incorporated under federal legislation are now subject to CRTC jurisdiction. These companies are Teleglobe Canada, Bell Canada, the British Columbia Telephone Company, Canadian National Telecommunications and Canadian Pacific Telecommunications. The remaining carriers are provincially incorporated or owned and fall under provincial jurisdiction.

International telegraph and telephone communications are subject to an international telecommunication convention and its regulations or regional agreements, or both. Overseas cables landed in Canada are subject to external submarine regulations under the Telegraphs Act.

Under the Railway Act, the commission is required to ensure that all tolls, including rates or charges for the public or any individual for telecommunications services, are just and reasonable. The commission must ensure that carriers do not discriminate unjustly in rates, services or facilities. The act requires the commission to approve any agreements entered into by carriers on the interchange of traffic or limitation of liability and, among other things, gives the commission jurisdiction over interconnections between the telecommunications carriers.

The CRTC developed rules of procedure to assist in the regulation of telecommunications carriers. They came into effect in August 1979.

These rules are intended to ensure commission proceedings of sufficient focus and depth to permit the highest possible quality of decision making; assist regulated companies to deal effectively with commission concerns; facilitate involvement of the public in the regulatory process through greater informality and public access; increase the capacity of interveners to participate at public hearings in an informed way; and eliminate unnecessary delay in the regulatory process. During hearings over general rate increases, these rules permit the commission to require that a carrier pay costs to an intervener which meets certain conditions.

As a result of four major parliamentary examinations of broadcasting since the 1920s, Canadian law has come to regard publicly owned broadcasting, commercially based radio and TV, and cable television as constituting a single system. This wording comes from the 1968 Broadcasting Act which still provides the authority under which the CRTC regulates the Canadian broadcasting system. The act directs the CRTC to regulate and supervise all aspects of the Canadian broadcasting system with a view to implementing certain policy objectives: effective Canadian ownership and control of broadcasting facilities; a wide variety of programming which provides reasonable, balanced opportunity for the expression of differing views on matters of public concern; availability of service in English and French to all Canadians; and programming of high standard that makes use of predominantly Canadian creative and other resources.

The 1968 Broadcasting Act stated that the Canadian broadcasting system must safeguard, enrich and strengthen the cultural, political, social and economic fabric of Canada. Under CRTC regulations dealing with program content, broadcast time devoted to non-Canadian programming by television stations and networks is not to exceed 40% between the hours of 6:00 a.m. and midnight. In AM broadcasting, 30% of the musical compositions presented by stations and networks between 6:00 a.m. and midnight are to be Canadian. Individual FM radio station or network operator commitments as to Canadian content are conditions of their licences.

In 1969, the CRTC considered the capability of cable television technology to enlarge the coverage areas of United States stations and networks in Canada and concluded that the rapid acceleration of such a process would represent the most serious threat to Canadian broadcasting since 1932 before Parliament decided to vote the first Broadcasting Act. The regulations for cable television issued in 1975 reflect this concern. Local and regional stations are given precedence over distant stations in the order which cable operators must use in assigning distribution channels available on any cable television system. There is also provision for the substitution of the signals of a Canadian station for the signals of an American station when an identical program is being transmitted during the same period.

Pay television is technologically possible in Canada. Under such a system, viewers would pay for a channel or program carried by their local cable-TV system. The CRTC policy on cable television issued in December 1975 said that it was premature to introduce a comprehensive pay television service in Canada. In June 1976 the commission invited submissions on pay television about the form and function of an organization, institution or agency to assemble, produce and acquire programming for distribution to licensed broadcasting undertakings for pay television on a national or regional basis in English and in French.

In May 1977, the CRTC held public hearings to examine and discuss material received in more than 100 briefs about pay television. In March 1978, the CRTC rejected these proposals because Canadian programming on such systems was merely tolerated and as proposed would not have received adequate financial support. In March 1979, the CRTC commented that, in these proposals, Canadian programming appeared to be considered as more a cost of doing business than as a valid objective of the Canadian broadcasting system.

The CRTC issues broadcasting licences under the Broadcasting Act once the communications minister certifies that the applicant has satisfied the technical requirements of the Radio Act and regulations. The minister must have certified that

Licences for citizen's band radios are being issued to an average of 20,000 Canadians a month. There has been a levelling off from the peak of 53,000 in April 1977, but DOC predicts there may be 1.5 million units in service by 1983.

the applicant has been or will be issued a technical construction and operating certificate. Availability of technical facilities for broadcasting is also subject to terms of Canada-US agreements covering television and FM.

Licensing and regulating radiocommunications. Radiocommunications, except for matters covered by the Broadcasting Act, are regulated under the Radio Act and regulations and the Canada Shipping Act and ship station regulations. The Radio Act and regulations provide for licensing radio stations performing terrestrial radio services, earth and space stations engaged in space radiocommunication services.

Licensing is the federal government's method of maintaining control over radiocommunications. Under the Radio Act, radio stations (other than those used in broadcasting undertakings) using any form of Hertzian wave transmission, including television and radar, must be licensed by the communications department unless exempted by regulation. General radio regulations provide for six classes of radio station

licence: coast, land, mobile, ship, earth and space. Various categories of service may be authorized in each class including public commercial, private commercial, amateur and experimental.

The number of licensed radio stations in Canada in the year ended March 31, 1979 was 1,413,537. These include stations operated by federal, provincial and municipal departments and agencies, stations on ships and aircraft registered in Canada and stations in land vehicles operated for public and private purposes. Broadcasting undertakings under the Broadcasting Act are excluded from this list.

The number of radio licences in Canada in 1978-79 increased by 12.6% over the previous year. This represents a levelling off of growth in the number of radio stations. The increase the previous year was 40.3%.

This reflects a slower rise in the number of citizen's band radio or General Radio Service (GRS) licences. There were 951,849 such licences in effect in 1978-79. But the issuing of new licences fell from a peak of 53,000 in April 1977 to an average of about 20,000 a month by September 1978. The department expects this rate of growth to continue and anticipates 1.5 million licensed units in service by 1983. Some see GRS as a prelude to the cordless telephone, a development which in the future may culminate in the integration of GRS, telephone communications and the new generation of computers.

GRS is not the only growth area. There is also a growing demand from commercial land mobile radio services, such as those used for transportation, shipping, police and fire. There were 300,467 such licences in effect during 1978-79, and 284,933 the previous year. Such is the demand that existing spectrum allocations could become saturated in major urban areas by the 1980s. To resolve the problem, the communications department has reviewed ultra high-frequency (UHF) spectrum allocations, particularly in the 406 to 960 MHz band used for such services as UHF TV broadcasting, land mobile, amateur radio and others. A new allocation policy for this range of spectrum, announced in March 1979, provides for additional land mobile services.

Licensing involves assigning specific frequencies to each station. Bands of frequencies are allocated for various types of services, often on a shared non-interference basis. To ensure efficient use of the spectrum, it is necessary to select the appropriate frequency for a radio station, evaluate its compatibility with other users of the electromagnetic spectrum, register the licensee domestically and, in some cases, notify the International Frequency Registration Board of the International Telecommunications Union (ITU) at Geneva. Included in a master international frequency register, Canadian assignments are given protection from interference by foreign stations.

Standards for radio transmitters are drawn up in consultation with the electronics industry, organizations, associations and the public. The standards take into account technical factors affecting frequency spectrum utilization, reliability of apparatus, and compatibility under conditions of service. DOC develops standard specifications and tests apparatus.

DOC enforcement activities include technical inspection of all radio stations. This involves: monitoring and measurement of radiated signals to ensure compliance with regulations and conditions of licensing; location and suppression of radio interference; technical examination of candidates for radio proficiency certificates necessary for operators of radio stations; and direction of prosecutions in court. These enforcement activities are carried out in five regional offices, 44 district offices, 10 fixed monitoring stations, eight mobile monitoring vehicles and 13 regional spectrum observation centres.

International services

16.4

Teleglobe Canada, a federal Crown corporation, provides the link between domestic telecommunications carriers and almost every country in the world. The mandate of the corporation is to establish, maintain and operate Canada's external telecommunications services and co-ordinate them with the services of other countries.

Canadians now telephone around the world almost as easily as they call across town. Businessmen may contact clients rapidly, even though the latter may live on another continent. Meanwhile, Canadian television viewers are able to watch major events around the world live through satellite relays.

Public telephone, telex and telegraph services are the backbone of international telecommunications. Teleglobe Canada operates 920 international lines with 185 countries for telex. Over 250 countries can be reached by telegraph. The Crown corporation also operates 2,300 telephone lines which cover 217 countries.

Teleglobe Canada is a member of a Commonwealth telecommunications organization (CTO) and as described in section 16.2.4, an international telecommunications satellite organization (INTELSAT). It is a recognized private operating agency on an international radio consultative committee and international telegraph and telephone committee of the ITU. Teleglobe Canada participated in the negotiations to found an international maritime satellite organization operating a satellite communications network to link the fleets of member countries with their coastal stations. The negotiations were expected to be completed in 1979, and the system to become operational in 1980.

16.5 Radio and television

Broadcasting, like other communications systems in Canada, has evolved to meet the needs of a comparatively small bilingual and bicultural population in a country of vast size. One problem has always been to provide an adequate broadcasting service for all Canadians — even those living in remote parts of the country.

The first move was to establish an east-west radio network during the late 1920s and 1930s to link communities from the Atlantic to the Pacific along Canada's southern border where the vast majority of the population lives. Television broadcasting in Canada began in 1952, but it was not until 1959 that a basic television network between British Columbia and Newfoundland was established.

The next problem was to reach people in Canada's North. In 1958, Parliament voted funds for the northern service of the CBC, Canada's public broadcasting service. In its early years, provision of the service depended upon adaptations of resources normally used to serve southern Canada, or upon such improvisations as CBC's scheme of circulating recorded TV programs to low-powered, self-contained television transmitters installed in remote or isolated communities.

Then with the new information technology — the communications satellite — CBC's northern television service moved to live satellite transmission in 1973. Stations north of the 60th parallel obtain their programming by satellite mainly from the CBC transcontinental networks across southern Canada.

In 1974, Parliament approved a CBC's accelerated coverage plan to provide radio and television services in all communities of 500 or more. By mid-1979, radio and television transmitters were located in all but one such community.

Because of accelerated coverage and the satellite technologies, the reach of Canadian broadcasters is now extensive. Only 1.1% of Canadians could not pick up at least one television station in January 1979. In 1977 nearly 95% could receive at least two Canadian television stations in their own language and 98% of English-speaking Canadians outside Quebec had access to at least four Canadian radio stations. Roughly 97% of the Quebec population could pick up at least four French-language radio stations.

According to the CRTC, in 1977 there were still 590,000 anglophones and 250,000 francophones who could not receive television in their official language. Fibre optics transmission systems, which can carry many more channels than the existing copper cable, may provide one solution to this problem. Direct broadcast satellites might also provide an economic solution. Small earth terminals costing less than \$200 could be placed on the rooftops of homes in remote areas.

The extension of broadcasting service throughout a country as large as Canada is expensive, and Canada has combined public ownership and commercial operations to achieve this purpose.

Hundreds of private business firms operate everything from cable television in small communities to major broadcasting stations in metropolitan centres. In 1969, radio and television companies that were more than 20% foreign-owned earned about 13% of the revenues of the entire industry. In that year, an order-in-council forbade foreign ownership of more than 20% of a broadcasting undertaking — radio, TV or cable. Now all Canadian broadcasting undertakings are at least 80% Canadian-owned.

Public sector broadcasting is at least as significant as the private. The largest broadcasting enterprise in the country is the CBC, a Crown corporation of the federal government. TV Ontario and Radio-Québec are regional educational-TV networks operated by the governments of Ontario and Quebec, respectively. The department of education in Alberta operates a radio network. Many small cable-TV systems and rebroadcasting transmitters are owned by community associations.

Canadians are heavy users of radio and television. According to the CBC research department, an estimated 98% of Canadians had a radio in their homes in 1978, while 86% had an FM radio set; 97% had at least one television set, while 74% had colour TV; and 36% had more than one TV.

A vast and complex array of different types of stations and transmitters are used. In 1979, there were 449 licensed AM radio stations, 416 FM radio stations, 1,045 television stations, 273 low-power relay transmitters, eight short-wave stations, 550 cable television systems, as well as 32 radio and television networks.

CBC coast-to-coast facilities and coverage are described in section 16.5.2. There are no full-time AM or FM networks operated by private commercial interests, though more than 100 private stations are affiliated with the English or French networks of the CBC. Many part-time regional networks of privately owned stations operate to present such specific program services as play-by-play accounts of major sporting events.

Networking in television is more pervasive. The CBC operates two nationwide television networks, one in English and one in French. There are three major commercially operated networks. The CTV network provides an English-language program service from coast to coast, and the Réseau de télévision TVA offers French-language programming across Quebec. The privately owned Global Communications Ltd. serves Southern Ontario. The definition of educational programming is so broad that both TV-Ontario and Radio-Québec are able to fill most of the evening hours with entertainment of a general nature.

Canadian content requirements and related cultural and social objectives have never been easy to achieve because most Canadians live in a strip along the Canada-US border. According to the CRTC, more than 81% of Canadians had access in 1977 to at least one American television channel. About 70% could pick up three American networks, and the American Public Broadcasting Service could be picked up by 70%. In English Canada, 62.4% of the population could pick up four American TV channels while only 45.6% could receive four Canadian channels. In Quebec, 49% of the population could pick up one American channel.

Despite CRTC regulation of cable TV and Canadian content regulations, accessibility of American TV channels has meant that more Canadians watch American programs. Even with an increase in the number of Canadian television stations, the proportion of Canadians watching them declined between 1967 and 1977 from 74.1% to 69.5% in English Canada and from 80.1% to 74.3% for French-language stations in Quebec. This competition has meant that, in spite of the CRTC content regulations, Canadian English-language stations, particularly in the private sector, purchase much American programming. As a result, in 1976 more than 70% of all the programming viewed by Canadian audiences on English-language stations was of foreign origin. For entertainment and sports programming, the figure was 81.7%.

The Canadian Association of Broadcasters (CAB), the national trade organization for private broadcasters in Canada, offered one explanation for the popularity of American programming in Canada in its January 1979 brief to the committee on the implications of telecommunications for Canadian sovereignty. The major reason is that the competition is funded by a market that in 1977 generated \$6.7 billion. That was the total amount of American TV commercial sales. In Canada the equivalent commercial

figure was \$375.6 million, both private and CBC. Even taking into account the CBC's parliamentary grant, the total of American funds to underwrite programming dwarfed the amount available in Canada. Hence budgets of \$250,000 to \$500,000 an hour represented the American norm compared with \$60,000 to \$80,000 an hour in Canada.

In its March 1979 report, the committee made a host of recommendations to buttress the Canadian character of the CBC. The broadcasting services provided by the CBC are the main national instruments for the preservation of Canadian social and cultural sovereignty. The committee recommended that the CBC be afforded whatever means were required to reinforce that function and that a task force be set up to study the CBC; that provincial governments move into broadcasting of a more general character; and that private broadcasters provide for a continuing expression of Canadian identity. More precise CRTC regulation of Canadian content, the use of cable-TV revenues to support a Canadian program-production fund, government initiatives to promote corporate sponsorship of Canadian programming, and a series of measures to reduce the incursions of American border stations, particularly via cable television, were further recommendations.

16.5.1 Cable television

Cable television has expanded dramatically in the last 12 years. In 1968, cable passed by 29.9% of Canadian homes, but only 13.2% of households subscribed to the service. By 1977, 71.7% of homes were passed by cable and 48.2% received the service. In January 1979, an estimated 52% of Canadians were hooked into a cable TV system, one of the highest percentages in the world.

One reason for expansion of cable-TV services has been the popularity of the American television stations which cable makes available to Canadian audiences. Between 1967 and 1977, the audience share of American stations rose from 24.3% to 29.2%; and in Quebec from 4% to 9%, with the gain made almost entirely at the expense of French-language TV stations.

The cable industry is planning to expand into the provision of a variety of new services rendered possible by the new information technologies. Cable companies produce community and educational programming. The cable industry is experimenting with two-way TV. Grand River Cable, a subsidiary of one of Canada's cable operators, started a teletext field trial in Kitchener, Ont., and was planning to move to a more elaborate videotex system. Canadian Cablesystems Ltd. applied for CRTC approval of an experimental two-way cable service in London, Ont., which would allow viewers to talk back over their television sets. These and other proposed trials would make available to the Canadian public a variety of information-retrieval services, teleshopping, remote security services, automatic utility meter reading and a host of other services.

The cable industry also could make use of the new communications satellites. The Canadian Cable Television Association (CCTA), a national association of cable companies, expressed an interest in forming multi-casting, nationally interconnected networks through the use of Canada's existing and future satellite capacity. In early 1979, the communications department decided to permit earth station ownership by cable operators and other non-carriers.

Expansion of cable into a variety of new services introduces the possibility of competition with telecommunications carriers and other information providers. In the not too distant future cable companies, with their capacity for video carriage, may be expected to compete through direct-feed programming with the print media, carrying news, classified ads, audio-visual substitutes for newspaper and magazine features, alternative versions of the yellow pages in telephone directories, and other material. This possibility raises questions of regulatory principles.

16.5.2 Canadian Broadcasting Corporation (CBC)

Evolution. As early as 1929, a federal Royal Commission on Broadcasting had recommended the creation of a public broadcasting system, national in scope, to combat the incursions of American radio and to serve areas in which commercial radio was uneconomic. It was not until 1936 that Parliament passed the Broadcasting Act which

created the CBC. The new public corporation, financed by licence fees and advertising, had two responsibilities: to provide a national radio service and to regulate all broadcasting in Canada — licensing, programs and commercial content.

During the next two decades, there was continuing debate about the respective roles of private and public broadcasting in Canada. It culminated in 1958 with a revision to the Broadcasting Act which stripped the CBC of its regulatory authority and gave this responsibility to the Board of Broadcast Governors. A further revision 10 years later created the CRTC and gave it responsibility for regulating broadcasting. Under the 1968 act, the CBC is required to be: a balanced service of information, enlightenment and entertainment covering the whole range of programming in fair proportion; extended to all parts of Canada, as public funds become available; in English and French, serving the special needs of geographic regions, contributing to the flow and exchange of cultural and regional information and entertainment; and contributing to the development of national unity and a continuing expression of Canadian identity.

Facilities and coverage. The CBC operates two national television networks, English and French; four radio networks, AM and FM in English and French; a special medium and shortwave radio service in the North; and an international shortwave and transcription service.

In 1978, the CBC owned and operated 27 television stations and 348 television network relays and rebroadcasters. Television programming was also carried by 33 affiliated stations, 174 affiliated rebroadcasters and 48 privately owned rebroadcasters. Its national radio service owned and operated 64 radio stations and 393 rebroadcasters and low-power relay transmitters. The service was carried by 72 affiliated radio stations, 27 affiliated rebroadcasters and six private rebroadcasters. The corporation has production centres in Montreal (French) and Toronto (English), as well as in many cities across the country.

As of January 1979, the CBC radio networks, English and French, were available to 99.3% of Canadians. The comparable figure for the French and English television networks was 98.9%.

Under a radio affiliate replacement plan (RARP), full English and French CBC service is being extended to more than 80 cities and towns which had previously received only partial service through private affiliates. The new service is being provided over FM. Nine RARP transmitters were put into service in 1977-78, while English FM-stereo service was expanded by two new stations and French FM-stereo service by one.

Under its accelerated coverage plan, the CBC installed 105 new radio and television transmitters in 1977-78. Since the first installation in 1975, more than half the 650 transmitters to be phased in had been installed. The plan will provide service in the appropriate official language to all unserved or inadequately served communities with a population of 500 or more. Because of budget cuts announced by the federal government in 1979, the six-year plan is expected to take eight years to complete.

CBC television in the North is now largely provided by the Anik A satellites of Telesat Canada. In co-operation with the federal communications department, the CBC is providing experimental delivery of television service to remote communities using the more highly powered Hermes satellite, one of the prototypes for the direct broadcast satellite of the future.

General programming. The CBC provides about 150,000 hours of radio programming and 18,000 hours of original television programming every year including news, current affairs, drama, sports, religion, science, children's programs, consumer information and light entertainment.

CBC radio presents popular and classical music, serious drama and light comedy, in-depth exploration of ideas and easy conversation, analyses of politics and the arts, local news, current affairs, weather and traffic reports, and regional and network programming. The CBC radio service supports performers and writers and gives expression to Canadian identity.

The English and French CBC television services provide Canadian programming at levels in excess of private television stations and of the requirements under the CRTC's Canadian content regulations. About 64% of the CBC English television schedule is

filled with Canadian programming; the comparable figure for the French network is 67%. Canadians now turn to the CBC for about half their total viewing of Canadian programs. However, the CBC viewing share has eroded over the last 12 years. Between 1967 and 1976, the audience share of the English network fell from 34.6 to 22.5%.

Priorities of CBC television include the showing of 80% Canadian programming by the early 1980s; broadening French television network programming with a fuller reflection of Canada as a whole; improvement of regional programming on both networks; and enrichment of the reporting of critical events in Canada. The CBC planned to inaugurate a second French and English television service as alternative programming without commercials, to set up program advisory committees and hold periodic forums in selected communities across Canada. The CBC also committed itself to increase its use of independent Canadian television productions and Canadian feature films. Achievement of many of these objectives was postponed because of cuts in the 1979-80 CBC budget by the federal government.

The CBC's northern service provides radio and television through the Anik satellites. Radio programs also cover events in the South affecting the North, programming on the North as a whole, programming on territorial events, and sub-regional and local programming. The latter categories are all increasing, as is native-language programming. The CBC also provides some television programming originated in the North, but the CRTC recommended in 1979 that this be substantially extended and Parliament put up funds for this purpose.

International activities. Radio Canada International (RCI), the CBC's overseas shortwave service with headquarters in Montreal, broadcasts daily in 11 languages and distributes recorded Canadian programs free to broadcasters throughout the world. The number of Canadian radio programs recorded for shipment overseas tripled in recent years. In 1973-74, 42,000 records or tapes were shipped to stations around the world; in 1977-78, the figure was 132,278. The CBC estimates that the RCI shortwave service reaches several million listeners a week in the USSR, the United States, Africa, Europe and Latin America.

16.5.3 Statistics of the broadcasting industry

Statistics on the radio and television broadcasting undertakings are obtained by Statistics Canada in co-operation with the CRTC. In 1978, returns were received from 317 private radio reporting units and 65 television reporting units. Financial data of the CBC are shown separately. Returns cover the broadcasting year, a 12-month period ending August 31 (Table 16.7).

CBC operations produced revenues from sale of air time of \$74 million, an increase of 12.1% over 1977. Of this amount television accounted for 99.2% and radio 0.8%. The net cost of operating the CBC rose to \$483 million in the year ended August 31, 1978 from \$411 million in 1977.

Total operating revenues of the private radio industry in 1978 came to \$308 million, an increase of 13.2%. Revenue from sale of air time came to \$305 million and rose 13.4%. Total operating expenses in 1978 reflected an annual increase of 14.2%, and amounted to \$258 million. Net profit before taxes increased 5.8% from 1977 and came to \$37.9 million. The industry employed 8,674 persons in 1978.

In 1978, there were 5,944 persons employed in the private-television industry, an increase of 4.6%. Total operating revenues of the industry were \$403 million, a rise of 21.7%. Sale of air time brought in \$368 million, representing an increase of 18.7%. The total operating expenses of private television in Canada were \$309 million, a rise of 21.6% over 1977. Of this, the industry spent \$176 million on program expenses, 57% of the total. Net profit before taxes increased 31.8% to \$80.7 million in 1978.

Cable television. Table 16.8 presents the financial statistics of the Canadian cable television industry comprising 463 operating systems in 1978; it reported an increase of 17.9% in total operating revenue. Revenues came to over \$273 million in 1978, in comparison to nearly \$233 million in 1977. Subscription revenue from individual subscribers and multi-outlet contracts accounted for over \$254 million in 1978. Operating expenses before deducting interest and depreciation charges rose from \$126.9

million to \$152.7 million, resulting in net operating revenues of some \$120.5 million compared with \$106.0 million the previous year. After deducting interest, depreciation and making other adjustments, the industry achieved a net profit before taxes, to August 31, 1978, of \$52.8 million compared with \$45.1 million in 1977.

Postal service

16.6

The basic function of the Canadian Postal Service is to receive, convey and deliver postal matter. It maintains thousands of post offices and uses air, rail, road and water transportation facilities. Associated functions include sales of stamps and other articles of postage, registration of letters and other mail for dispatch, parcel insurance, accounting for COD articles and transaction of money-order business. Because of its transcontinental facilities, the post office assists other government departments with such tasks as selling hunting permits, collecting annuity payments, distributing income tax forms and public service employment application forms, and displaying official posters.

Post offices are established wherever the population warrants. In rural areas and small urban centres they transact all the functions of a city office. In larger urban areas, postal stations have functions similar to the main post office, including general delivery service, lock-box delivery and letter-carrier delivery. Canada's larger postal installations are semi- or fully-automated plants with optical character reading machines capable of reading printed or typed addresses; machines which automatically and at high speed cull, face and cancel stamps; letter sorting machines capable of handling 26,000 pieces of mail an hour; conveyors and chutes, parcel and bag sorting machines, wrapomatic parcel sealing machines, photo-electric counters and intercom systems. Outside some regular post office buildings there are stamp-vending machines and curbside mail boxes.

The operating service of Canada Post is organized into four regions divided into districts. The operating and support functions required to provide postal service are the responsibility of local postmasters who receive technical and administrative assistance from district and regional offices at strategic points.

Postal service is provided throughout Canada. The country's airmail system utilizes most transcontinental flights, supported by many branch and connecting lines, and links up with United States domestic and other international airmail systems. First-class domestic mail is carried by air between Canadian points whenever this expedites delivery. Air stage routes provide an all-class mail service to many northern areas which can be served only by air. There are over 74 030 km (kilometres) of airmail and air stage routes.

By the end of the fiscal year 1977-78 there were 8,289 postal facilities in operation in Canada. This was made up of 283 postal stations, 440 staff post offices, 1,975 semi-staff post offices and 2,033 sub-post offices. Letter carrier routes numbering 13,750 served 5,755,033 points of call. Rural and suburban services (5,036) served 1,036,694 customers.

Post office revenue increased from \$774.9 million to \$945.8 million during the 1977-78 fiscal year. Expenses increased from \$1.4 billion to \$1.5 billion. The deficit decreased by \$19.5 million from \$578.8 million to \$559.3 million. Gross revenue receipts were received mainly from postage, either in the form of postage stamps and stamped stationery, postage meter and postage register machine impressions, or in cash. During the year 34 million money orders were issued, valued at nearly \$1.1 billion.

The press

16.7

Daily newspapers published in Canada in 1978 numbered 122, counting morning and evening editions separately. Combined circulation was about 5.3 million — about 82% in English and 18% in French (Table 16.8). Publishers' surveys show that each newspaper is read by an average of three persons.

Daily newspaper advertising net revenue in 1976 was \$661.0 million. In 1978, there were 19 daily newspapers with a circulation in excess of 100,000, accounting for 63% of total circulation. There were 12 dailies published in French, 10 of them located in

Quebec. Although the circulation of daily newspapers blankets the more populous areas well beyond publishing points, smaller cities and towns and rural areas are also served by 825 weekly newspapers catering to local interests.

About 28% of Canada's daily newspapers are privately owned or independent. In 1979 there were three major newspaper chains: Southam Press Inc. (14 dailies), Thomson Newspapers Ltd. (36 dailies) and FP Publications Ltd. (nine dailies). Both Southam and Thomson Newspapers are publicly owned companies with shares traded on Canadian stock exchanges. Papers in the Thomson chain are concentrated in the smaller cities. Southam accounted for about 22% of total daily circulation, Thomson for 10% and FP for about 20%.

In addition to their news-gathering staffs and facilities, Canadian newspapers subscribe to a number of syndicated agencies and wire services, the largest being The Canadian Press (CP), a co-operative agency owned and operated by Canadian dailies. Largely by teletype and wirephoto transmission, it provides its 112 member newspapers with world and Canadian news and serves radio and television stations. CP has its own news-gathering staff and each member newspaper provides important local news for transmission to fellow members. Members share the cost in ratio to their circulations.

CP carries world news from Reuters (the British agency), from The Associated Press (the United States co-operative) and from Agence France-Presse (of France) and these agencies receive CP news on a reciprocal basis. CP maintains a French-language service in Quebec.

United Press Canada (UPC), the second major news wire service in Canada, is a private company owned by a partnership of the Toronto Sun Publishing Co., Sterling Newspapers Ltd., and United Press International, Inc. UPC was formed January 1, 1979 to supersede the old United Press International of Canada Ltd. which was a wholly owned subsidiary of United Press International (UPI). UPC provides full Canadian coverage in news, sports and pictures from its own staff bureaus located across the country. Services are delivered at high speed (1,200 words a minute), slow speed, and by telephoto network. All UPC bureaus are linked to UPI's North American communications network and all are equipped with video display terminals for copy transmission and editing and with telephoto transmitters for direct picture transmission. UPC also delivers to its newspaper, radio and television clientele the full worldwide services of UPI. UPC also provides coverage of Canada for distribution by UPI throughout the rest of the world.

Press statistics. Table 16.9 gives numbers and circulations of reporting English- and French-language newspapers, by province, for 1977 and 1978, estimated from *Canadian Advertising*. Circulation figures are given for daily English- and French-language newspapers only. Such circulation figures are relatively easy to obtain because, in their own interest, newspapers qualify for and subscribe to the Audit Bureau of Circulation. For these, ABC "net paid" figures have been used; "controlled" (free) distribution newspapers are not included. On the other hand, circulation data for foreign-language newspapers, weekly newspapers, weekend newspapers and magazines are incomplete. Ethno-cultural publications numbered 275 in 1978 (Table 16.10); 30 were Ukrainian, 21 Italian, 18 German, 18 Jewish, 14 Greek, 13 Chinese, 12 Arabic, 11 each by Dutch and Polish groups, 10 East Indian and smaller numbers for people of additional groups or national origins, as well as seven inter-ethnic publications.

Ethnic Press Analysis Service. During 1977-78, the ethnic press analysis service of the ethnic liaison division, secretary of state department, monitored opinion trends and major events in Canadian ethno-cultural communities through analysis of over 200 ethnic newspapers and periodicals published in over 30 languages. A summary of the analyses was available to government departments and agencies through a monthly publication *The Canadian Ethnic Press Review*. The service also carried on liaison activities with the Canada Ethnic Press Federation and its four affiliated press associations in Toronto, Montreal, Winnipeg and Vancouver.

Native Communications Program. This program received Cabinet and Treasury Board approval in early 1974. Grants are provided to native communications resource

organizations set up to serve the communications needs of native people in given large geographical areas. The native communications societies collectively produce radio and television programs, newspapers, film and video, library services and point-to-point survival communications through high frequency and single side band radio systems.

During the fiscal year 1978-79, support was provided to 11 native communications societies that range from a single-product-oriented society in Northern Quebec to the multi-media and internationally known operation of the Alberta native communications society.

Sources

- 16.1 - 16.5.2 Information Services, Department of Communications.
- 16.5.3 Transportation and Communications Division, Economic Statistics Field, Statistics Canada.
- 16.6 Public Affairs Branch, Post Office Department.
- 16.7 The Canadian Press; Canadian Daily Newspaper Publishers Association; United Press Canada; Ethnic Press Analysis Service, Department of the Secretary of State; Native Communications Program, Department of the Secretary of State.

Tables

..	not available	e	estimate
---	not appropriate or not applicable	p	preliminary
—	nil or zero	r	revised
--	too small to be expressed	certain tables may not add due to rounding	

16.1 Pole-line and wire length and number of telephones in use, 1973-78

Year	Systems reporting	Route length km	Length of wire km	Telephones in use			Per 100 population
				Business	Residential	Total	
1973	985	550 396	109 338 836	3,428,292	8,249,152	11,677,444	52.3
1974	904	564 880	117 695 690	3,691,581	8,762,750	12,454,331	55.0
1975	850	537 521	124 994 708	3,928,375	9,236,635	13,165,010	57.2
1976	806	582 821	135 443 220	4,126,554	9,758,501	13,885,055	59.6
1977	333	578 236	146 346 973	4,308,549	10,179,232	14,487,781	61.8
1978	260	642 207	158 378 021	4,527,907	10,643,666	15,171,573	64.3

16.2 Telephones in use, by province, 1977 and 1978

Province or territory	Telephones						
	On private lines		On party lines		Extensions		Coin telephones
	Business	Residential	Business	Residential	Business	Residential	Business
1977							
Newfoundland	18,966	98,805	1,137	28,134	16,072	32,127	1,995
Prince Edward Island	5,083	20,425	379	12,118	3,997	8,326	363
Nova Scotia	37,380	198,394	1,504	45,398	33,123	72,476	3,458
New Brunswick	26,674	149,795	1,087	39,729	31,921	59,268	2,042
Quebec	302,459	1,728,774	7,847	284,806	262,382	602,914	27,180
Ontario	445,475	2,408,511	8,716	395,946	356,779	1,117,539	37,750
Manitoba	53,764	282,961	3,356	56,585	48,261	106,607	3,747
Saskatchewan	43,798	231,473	3,461	69,645	36,090	92,136	2,900
Alberta	123,743	548,705	4,116	78,017	104,423	258,771	8,892
British Columbia	145,312	644,428	2,601	210,139	105,684	279,185	8,990
Yukon	2,244	3,976	169	1,522	1,365	939	141
Northwest Territories	3,813	7,875	48	639	2,324	2,061	216
Canada	1,208,711	6,324,122	34,421	1,222,678	1,002,421	2,632,349	97,674
	Private branch exchanges		WATS ¹	Centrex	Mobile	Total	Telephones per 100 population
	Business	Residential	Business	Business	Business		
Newfoundland	18,010	—	—	4,864	473	220,583	39.1
Prince Edward Island	4,551	—	—	—	54	55,296	45.4
Nova Scotia	31,280	—	1	8,934	391	432,339	51.5
New Brunswick	22,224	—	—	9,975	205	342,920	49.6
Quebec	367,692	36	2,637	150,573	1,194	3,738,494	59.5
Ontario	561,735	47	5,416	234,270	1,883	5,574,067	66.0
Manitoba	70,564	—	306	4,258	168	630,577	60.9
Saskatchewan	44,401	—	42	8,383	806	533,135	56.5
Alberta	158,568	—	—	16,208	14,240	1,315,683	68.0
British Columbia	172,528	—	772	38,872	3,764	1,612,275	63.9
Yukon	2,325	—	—	—	—	12,681	57.6
Northwest Territories	2,748	—	—	—	7	19,731	45.2
Canada	1,456,626	83	9,174	476,337	23,185	14,487,781	61.8

16.2 Telephones in use, by province, 1977 and 1978 (concluded)

Province or territory	Telephones						
	On private lines		On party lines		Extensions		Coin telephones
	Business	Residential	Business	Residential	Business	Residential	Business
1978							
Newfoundland	19,715	108,470	951	23,417	16,584	37,446	2,145
Prince Edward Island	5,443	21,990	351	12,308	4,314	9,726	380
Nova Scotia	38,981	207,354	1,504	44,593	35,871	79,464	3,656
New Brunswick	28,652	156,122	1,115	39,368	33,026	64,580	2,115
Quebec	314,088	1,799,909	7,652	281,423	270,706	626,237	27,998
Ontario	467,465	2,504,211	7,982	380,732	372,074	1,198,976	40,446
Manitoba	56,584	292,021	3,321	53,593	51,710	119,758	3,750
Saskatchewan	46,421	241,457	3,470	69,961	38,680	103,078	2,977
Alberta	138,282	585,900	4,574	81,568	116,888	294,025	9,317
British Columbia	154,388	696,492	2,793	199,355	111,864	295,213	9,410
Yukon	2,777	4,166	153	1,255	3,280	—	137
Northwest Territories	4,564	8,484	60	365	4,661	557	233
Canada	1,277,360	6,626,576	33,926	1,187,938	1,059,658	2,829,060	102,564
	Private branch exchanges		WATS ¹	Centrex	Mobile	Total	Telephones per 100 population
	Business	Residential	Business	Business	Business		
Newfoundland	16,830	—	—	6,785	—	232,343	40.6
Prince Edward Island	4,860	—	—	—	64	59,436	48.6
Nova Scotia	31,960	—	1	8,857	389	452,630	53.5
New Brunswick	22,694	—	—	10,964	206	358,842	51.3
Quebec	374,694	35	2,963	162,515	1,111	3,869,331	61.5
Ontario	587,984	57	6,353	237,326	1,901	5,805,507	68.5
Manitoba	69,762	—	375	5,497	227	656,598	63.8
Saskatchewan	45,928	—	47	10,154	1,047	563,220	59.1
Alberta	172,918	—	303	15,725	23,481	1,442,981	72.7
British Columbia	179,569	—	965	42,347	3,319	1,695,715	66.3
Yukon	1,431	—	—	118	—	13,317	61.1
Northwest Territories	2,553	—	—	169	7	21,653	50.2
Canada	1,511,183	92	11,007	500,457	31,752	15,171,573	64.3

¹On wide area telephone service lines.

16.3 Local and long-distance calls, calls per capita and average calls per telephone, 1973-78

Year	Local calls '000	Long-distance calls '000	Total calls '000	Calls per capita	Average calls per telephone		
					Local	Long-distance	Total
1973	18,396,642	658,248	19,054,890	854	1,575	56	1,631
1974	19,936,758	764,248	20,701,006	914	1,601	61	1,662
1975	20,340,605	853,504	21,194,109	922	1,545	65	1,610
1976	21,301,349	917,812	22,219,161	953	1,534	66	1,600
1977	22,249,410	991,434	23,240,844	991	1,536	68	1,604
1978	22,986,788	1,082,619	24,069,407	1,020	1,515	71	1,586

16.4 Financial statistics of telephone systems, 1973-78

Year	Capital stock ¹ \$'000	Long-term debt \$'000	Cost of plant \$'000	Revenue \$'000	Expenditure \$'000	Full-time employees	Salaries and wages* \$'000
1973	2,149,479	3,297,124	8,791,434	2,200,702	1,920,424	75,407	775,700
1974	2,308,008	3,764,305	10,039,662	2,514,907	2,234,221	81,225	921,007
1975	2,519,844	4,435,368	11,426,333	3,054,705	2,650,396	82,866	1,091,350
1976	2,709,137	4,988,387	12,936,322	3,485,404	3,112,719	83,864	1,269,868
1977	2,880,682	5,489,543	14,531,598	3,962,314	3,577,324	87,546	1,446,585
1978	3,194,762	6,322,293	16,029,996	4,583,388	4,112,297	92,873	1,630,115

¹Includes premium on capital stock.

*Full-time and part-time.

16.5 Financial statistics of telephone systems, by province, 1977 and 1978

Year and province or territory	Capital stock ¹ \$'000	Cost of plant \$'000	Revenue \$'000	Expenditure \$'000	Full-time employees	Salaries and wages ² \$'000
1977						
Newfoundland	59,609	212,817	62,175	53,582	1,291	17,831
Prince Edward Island	14,890	51,896	14,351	12,497	311	4,125
Nova Scotia	128,079	461,614	131,042	114,802	3,493	47,852
New Brunswick	92,437	379,540	112,664	87,719	2,641	38,177
Quebec ³	2,081,375	8,409,836	2,313,734	2,067,827	20,648	364,382
Ontario	81,925	165,848	52,496	35,592	27,661	445,466
Manitoba	—	603,156	150,401	143,912	4,583	70,554
Saskatchewan	15,942	581,769	142,512	124,711	3,853	59,267
Alberta	2	1,759,056	452,932	443,192	11,185	196,904
British Columbia	406,423	1,906,066	530,007	483,490	11,865	201,394
Northwest Territories	—	—	—	—	15	602
Total	2,880,682	14,531,598	3,962,314	3,577,324	87,546	1,446,585
1978						
Newfoundland	70,212	234,345	72,826	62,861	1,407	20,325
Prince Edward Island	15,019	57,585	16,629	14,324	310	4,580
Nova Scotia	128,464	500,099	150,297	131,390	3,517	52,049
New Brunswick	93,004	411,470	125,473	109,624	2,686	41,536
Quebec ³	2,301,350	9,207,891	2,697,687	2,389,331	21,582	396,889
Ontario	87,278	180,845	58,800	39,635	30,332	513,627
Manitoba	—	657,019	171,139	170,310	4,374	74,847
Saskatchewan	11,929	661,196	169,633	150,232	4,014	67,640
Alberta	2	2,000,108	542,630	518,080	11,587	219,098
British Columbia	487,504	2,119,438	578,274	526,510	13,044	238,676
Northwest Territories	—	—	—	—	20	848
Total	3,194,762	16,029,996	4,583,388	4,112,297	92,873	1,630,115

¹Includes premium on capital stock.²Full-time and part-time.³Includes data of Bell Canada which operates in Quebec, Ontario and the Northwest Territories.**16.6 Summary statistics of Canadian telecommunications, 1973-78**

Year	Operating revenues \$'000	Operating expenses \$'000	Net operating revenue \$'000	Pole-line length km	Wire length km	Em- ployees ¹	Telegrams '000	Cable- grams ² '000	Money transfers \$'000
1973	190,703	140,114	50,588	60,416	1,214,424	7,047	3,454	7,412	41,944
1974	230,078	172,554	57,524	57,594	1,203,894	7,163	3,743	7,292	55,305
1975	259,059	193,811	65,249	51,744	1,235,347	7,162	4,115	8,016	81,798
1976	278,311	213,749	64,562	49,085	1,309,636	6,973	2,747	9,295	63,033
1977	302,083	226,314	75,770	45,936	1,363,186	6,863	2,312	11,337	58,672
1978	348,326	263,270	85,056	42,846	1,411,970	7,150	2,225	11,213	65,347

¹Excludes commission operators.²Includes wireless messages and transatlantic telex messages.

16.7 Operating and financial summary of the radio and television broadcasting industry, 1976-78 (dollars)

Item	1976		1977		1978	
	Private stations	CBC	Private stations	CBC	Private stations	CBC
	Radio	Television	Radio	Television	Radio	Television
Operating revenue						
Revenue from sale						
of air time	241,459,315	264,219,054	268,740,442	310,209,043	304,868,253	368,415,281
Local time sales	173,186,116	8,837,000	195,873,764	88,859,260	222,053,271	103,386,993
National time sales	67,816,411	21,234,000	72,236,637	172,377,643	81,876,588	207,850,889
Network time sales	456,788	28,649,000	630,041	48,593,040	938,394	57,177,399
Production and other revenue	2,859,815	19,243,000	3,018,185	20,677,826	4,078,264	35,049,352
Syndication revenue	25,595	—	24,479	1,104,960	54,553	5,464,849
Production revenue	1,121,250	300,000	1,402,559	17,032,028	1,533,554	26,207,221
Other revenue	1,712,970	18,943,000	1,591,147	2,540,838	2,490,157	3,377,282
Total, operating revenue	244,319,130	77,963,000	271,758,627	330,977,769	308,946,517	403,464,633
Departmental expenses						
Program	68,882,998	230,364,000	80,033,147	138,047,981	91,283,956	176,459,439
Technical	10,229,662	67,831,000	12,187,966	27,432,359	13,847,070	28,623,180
Sales and promotion	50,074,709	15,199,000	56,361,152	31,389,684	63,062,916	38,116,523
Administration						
and general	69,055,926	80,166,000	77,403,695	57,601,551	89,743,299	66,090,927
Total, departmental expenses	198,243,295	393,560,000	225,985,960	254,471,575	257,937,241	309,290,069
Depreciation						
Interest expense	7,000,121	20,114,000	8,098,213	14,102,574	9,769,794	15,490,025
Other adjustments — income (expense)	5,602,435	14,053,000	5,674,328	8,292,404	6,773,118	8,179,621
Net profit (loss) before income taxes	2,736,108	1,759,000	3,820,625	7,130,696	3,432,176	10,202,156
Net profit (loss) after income taxes	36,209,387	—	35,820,751	61,241,912	37,888,540	80,707,074
Net cost of CBC operations	—	348,005,000	—	—	—	—
Salaries and other staff benefits	109,357,489	222,814,000	124,850,038	96,774,940	140,718,921	109,754,227
Average number of employees	7,920	11,422	8,286	5,682	8,674	5,944
				11,683		12,233
				259,424,000		299,145,000
				410,832,000		482,630,000

16.8 Operating and financial summary of the cable television industry, 1976-78

Item	1976	1977	1978
OPERATING REVENUE			
Direct subscribers	\$ 167,712,541	196,245,349	232,308,398
Indirect subscribers (apartments)	\$ 13,688,966	18,722,982	22,119,400
Installation (including reconnect)	\$ 11,261,226	13,106,832	16,132,456
Education services	\$ 41,379	3,315	6,197
Other	\$ 6,510,866	4,879,081	2,656,985
Total, operating revenue	\$ 199,214,978	232,957,559	273,223,436
OPERATING EXPENSES			
Program	\$ 10,169,015	13,539,480	16,380,639
Technical	\$ 45,229,334	53,819,358	67,715,475
Sales and promotion	\$ 9,342,781	9,737,905	11,419,904
Administrative and general	\$ 43,406,516	49,841,938	57,232,180
Depreciation	\$ 39,610,101	43,264,619	49,251,207
Interest expense	\$ 17,706,585	19,585,787	23,163,206
Other adjustments — addition to (or deduction from) income	\$ 2,296,605	1,914,620	4,727,539
Total, operating expenses	\$ 163,167,727	187,874,467	220,435,072
Net profit (loss) before income taxes	\$ 36,047,251	45,083,092	52,788,364
Salaries and other staff benefits	\$ 56,421,499	65,392,504	74,719,189
Number of employees, weekly average	5,157	4,946	5,293
SUBSCRIBERS			
Individual	2,496,948	2,776,231	3,122,507
Indirect (contract with apartment building owner)	646,367	640,992	653,126
Total, subscribers	3,143,315	3,417,223	3,775,633
HOUSEHOLDS SERVED			
Households in licensed area (including apartments)	4,985,304	5,303,781	5,866,336
Households offered service (cable passes by building)	4,706,402	5,051,360	5,535,559
Households in multiple dwellings, offered service (apartments)	1,020,818	1,261,819	1,386,093

16.9 Estimated numbers and circulations of reporting English-language and French-language newspapers, by province, 1977 and 1978

Province	1977			1978		
	Daily	Circulation ¹	Weekend	Daily	Circulation ¹	Weekend
English-language newspapers						
Newfoundland	3	50,302	1	3	71,310	—
Prince Edward Island	3	31,922	—	2	32,002	—
Nova Scotia	6	173,780	—	5	178,564	—
New Brunswick	5	124,623	—	4	128,715	—
Quebec	3	305,745	1	3	290,246	1
Ontario	48	2,201,364	1	47	2,101,238	1
Manitoba	9	268,397	—	9	278,084	—
Saskatchewan	4	134,564	—	4	138,929	—
Alberta	8	405,952	—	9	440,019	—
British Columbia	19	568,353	—	18	570,536	—
Total	108	4,265,002	3	104	4,229,643	2
French-language newspapers						
New Brunswick	1	14,984	—	1	16,975	—
Quebec	10	867,409	15	10	1,016,152	14
Ontario	1	46,457	—	1	46,845	—
Total	12	928,850	15	12	1,079,972	14

¹Circulation not reported for all newspapers.

16.10 Ethnic newspapers and periodicals published in Canada, by province, 1978

Ethno-cultural group	NS	Que.	Ont.	Man.	Sask.	Alta.	BC	Total
Arabic	—	5	7	—	—	—	—	12
Armenian	—	1	3	—	—	—	—	4
Black	1	2	5	—	—	—	—	8
Bulgarian	—	—	1	—	—	—	—	1
Byelorussian	—	—	1	—	—	—	—	1
Chinese	—	—	4	1	—	—	—	13
Croatian	—	—	5	—	—	—	8	5
Czech	—	—	3	—	—	—	—	3
Danish	—	—	1	—	—	—	1	2
Dutch	—	1	7	1	—	—	2	11
East Indian	—	—	6	—	—	—	4	10
Estonian	—	—	2	—	—	—	—	2
Filipino	—	3	5	1	—	—	—	9
Finnish	—	—	3	—	—	—	1	4
German	—	—	9	6	—	—	3	18
Greek	—	7	3	—	—	—	4	14
Hungarian	—	—	6	—	—	—	—	6
Icelandic	—	—	—	2	—	—	—	2
Italian	—	9	10	—	—	—	2	21
Japanese	1	—	3	—	—	—	2	6
Jewish	—	7	7	3	—	—	1	18
Korean	—	—	3	—	—	—	1	4
Latvian	—	—	3	—	—	—	—	3
Lithuanian	—	1	2	—	—	—	—	3
Maltese	—	—	1	—	—	—	—	1
Norwegian	—	—	—	—	—	—	1	1
Pakistani	—	1	4	—	—	—	—	5
Polish	—	—	10	1	—	—	—	11
Portuguese	—	2	3	—	—	—	3	8
Romanian	—	—	2	—	—	—	—	2
Russian	—	—	2	—	—	—	2	4
Serbian	—	—	4	—	—	—	—	4
Slovak	—	—	7	—	—	—	—	7
Slovenian	—	—	3	—	—	—	—	3
Spanish ¹	—	—	4	—	—	—	2	6
Swedish	—	—	1	—	—	—	1	2
Swiss	—	—	1	—	—	—	—	1
Ukrainian	—	1	18	7	2	2	—	30
Vietnamese	—	1	—	—	—	—	1	2
Yugoslav	—	—	1	—	—	—	—	1
Inter-ethnic ²	—	—	6	—	—	1	—	7
Total	2	41	166	22	2	3	39	275

¹Includes newspapers and periodicals representing South and Central America as well as Spain.²Includes more than one ethno-cultural group.**Sources**

16.1 - 16.8 Transportation and Communications Division, Statistics Canada.

16.9 Compiled by Canada Year Book Staff from *Canadian Advertising*.

16.10 Department of the Secretary of State.

Cultural activities and leisure

Chapter 17

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Measuring cultural growth

17.1

In recent years, government agencies and the general public have devoted increasing attention to the cultural dimension of Canadian life. The introduction of Canadian content regulations for television and radio and a capital cost allowance for investors in Canadian feature films are two prime examples at the federal level of government action designed to stimulate Canadian creative expression.

As an example of growth over a 10-year period, Table 17.1 summarizes levels of support to the arts from 1969 to 1979 by the Canada Council. From this one funding agency, annual support for music and opera, for example, rose from \$2.9 million in 1969-70 to \$9.7 million in 1978-79, and for theatre from \$2.8 million to nearly \$8.9 million, after hitting a high of nearly \$9.5 million in 1977-78.

Many aspects of culture cannot be quantitatively measured, such as the quality of a painting, the talent of a performer, the subjective enjoyment of an audience member, or even a particular need of support. However, as an element in the national economy the contribution of cultural activities to the gross national product can be measured. The cultural sector is labour-intensive and generates thousands of jobs for Canadians. Thus it may be viewed in economic as well as social and artistic terms.

With the arrival of the 1980s, there are clear signs that culture is subject to changing forces. The merging of culture and communications that is part of the communications revolution seems likely to reshape many aspects of Canada's cultural life.

Cultural statistics program

17.1.1

During the 1970s Statistics Canada with the co-operation of the secretary of state department undertook the collection of data for a cultural statistics program. This was set up to provide a base of information for the use of policy makers, administrators, researchers and the general public. The program comprises 14 projects: book publishing, book distribution, newspapers and magazines, film, radio and television, performing arts, the sound recording industry, libraries, museums, other cultural facilities, artists, cultural and leisure activities of Canadians, arts education, and cultural expenditures.

As a result of surveys, studies and statistics collected on these subjects, a number of bulletins and publications have been issued. Analyses of existing statistics are conducted by the cultural analysis section of the education, science and culture division of Statistics Canada.

A survey of leisure activities was conducted in conjunction with the monthly labour force survey of Statistics Canada in February 1978. Results were published in the annual *Culture statistics, performing arts, 1978*, Statistics Canada Catalogue 87-610, from which the following information on the performing arts has been extracted.

The performing arts

17.1.2

Today's performing arts, including theatre, music, dance and opera, share the collective entertainment market mainly with movies and sporting events. The appearance of television in the 1950s and its rapid growth in popularity was first seen as formidable competition for the stage. There was some fear that the availability of TV entertainment at home would cut deeply into attendance at the performing arts. Not only could TV provide more convenient and cheaper entertainment than a play or music concert, but TV could also serve up more really new material than could ever be hoped for from the performing arts.

But in the last two decades, instead of a decline of interest there has been a general upsurge particularly in theatre. Music, dance and opera have been close behind. Only recently has growth in theatre attendance levelled off while attendance at classical music concerts soared by 30% between 1972 and 1978.

Vitality in the performing arts has occurred at all levels, amateur as well as professional. Greater numbers are not only attending but becoming actively involved for recreation. The proportion who go to live theatre, much higher than average in the 15-19 age group, drops to the average in the 20-24 age range, and decreases with advancing age. Those in the 65-69 age range attend almost as frequently as the younger theatre-goers. The participation rate generally increases with higher education. More women go to live theatre than men, and women attend more often than men. A greater proportion of English-speaking Canadians attend than French-speaking Canadians. A small proportion of bilingual Canadians who go to theatre performances attend far more frequently than either their French- or English-speaking compatriots.

Just 20 years ago the Canada Council was funding 13 theatre companies and festivals. At last count there were more than 220 professional theatre companies in Canada and 160 of them received funds from the council.

The number of arts organizations fluctuates constantly. There are always organizations either expiring or coming into being. The 153 organizations surveyed in 1978 by Statistics Canada include nearly all the major companies.

For this annual survey the organizations included 92 theatre companies as compared to 78 in 1977, 34 music organizations (37 in 1977), 21 dance companies (22 in 1977) and six opera companies (six also in 1977). The following information is based on 1978 data.

During 1978 the 153 companies gave a total of 20,166 performances to combined audiences of 7.36 million people. The revenues earned amounted to \$34.8 million. The remaining gap was mainly filled by grants from the public and donations from private sectors totalling \$38 million. These were supplemented by revenue from program sales, bar and concession sales, and other sidelines. More precisely, grants accounted for 41% of all revenue for theatre companies, 28% for opera companies, 41% for music organizations and 46% for dance groups. In descending order the principal contributors were the federal government, provincial governments, private sector donations and municipal or regional governments.

On the expenditure side, personnel costs accounted for 32% to 54% of the budget for theatre, dance or opera companies and rose to 67% for music groups. Publicity accounted for 7% to 9% of total expenses, and administration from 10% to 15%. Other production costs, for sets, costumes, props, technical equipment and printing tickets, accounted for 17% for theatre, 8% for music, 24% for dance and 18% for opera.

To make a valid comparison between 1978 and 1977, only data from companies surveyed in both years are shown in Table 17.2. These are 126 organizations comprising 71 theatre companies, 33 orchestras, 16 dance companies and six opera companies.

For this subset of companies in 1978 compared with 1977 the number of performances was up 4%, earned revenue was up 14%, public subsidy was up 13% and total revenue was up 12%. This makes it sound like a good year for the performing arts but that is only one side of the story. Total attendance was down 4%, expenses were up 17% and all disciplines showed deficits, while in 1977 theatre and music each showed a surplus.

Professional theatre is the most prevalent of the performing arts in Canada. In 1978 more professional theatre companies gave more performances before more Canadians than all the professional music, dance and opera companies combined.

Second most pervasive of the performing arts is serious music, dominated by the symphony orchestra. Most major Canadian cities now support symphony orchestras and several, including the Toronto, Montreal and Vancouver symphonies and the National Arts Centre Orchestra, have achieved international status. Since 1972 classical music concerts have grown in popularity among Canadians more than any of the other performing arts.

Dance is also growing in popularity. Three major Canadian dance companies, the National Ballet, the Royal Winnipeg Ballet and Les Grands Ballets Canadiens have been enthusiastically acclaimed. Recent years have produced several smaller professional groups usually called chamber or concert ballet companies, often comprised of lead dancers from the major companies.

Opera is the most limited of the performing arts in its sphere of influence, but this most lavish and expensive of the arts is attracting growing numbers of devotees.

Regional picture. Activity in the performing arts is characterized by regional differences, influenced by Canadian geography and demography. The widest support is in Ontario, Alberta and British Columbia. In the other provinces, except for theatre in Prince Edward Island and dance and music in Manitoba, attendance is below the national average. Distribution of the population determines where performing arts companies establish themselves. Large cities offer the sustaining market as well as the creative climate, training ground and community of artists that foster development. But Canada's handful of large cities are strewn unevenly across the country.

If population concentrations are not sufficient to support performing arts organizations, those companies must seek out audiences. This means touring. In 1978 one in four theatre performances was given on tour, in music one in 10, in dance one in two, and in opera one in four.

Another dimension underlies touring. At the level of national policy, this first received formal recognition in 1968 with a federal government statement of support for democratization of cultural opportunities and decentralization of cultural resources. The aim of this policy was to ensure that as many Canadians as possible would have access to the performing arts. The touring office of the Canada Council was founded and has since helped many arts groups perform across Canada, often in quite remote communities.

One of the cultural roles of touring is to help different regions become more aware of each other, thereby reinforcing a sense of the Canadian community.

Canadian content. Flowering of the arts has occurred simultaneously with a creative outburst by Canadian playwrights, choreographers and composers and an enthusiastic willingness by companies to perform their works. Canadian works are now performed by the larger organizations, and in theatre in particular have become the bread and butter of many small experimental groups; the percentage of Canadian plays among performances has grown from about 28% in 1971 to about 55% in 1978. About 55% of dance performances in 1978 were Canadian, while 50% of music concerts included a Canadian composition. Only opera was well below the mark of the other performing arts, presenting Canadian work in 8% of performances.

More than 97% of Canadian households have television and the average Canadian spends much more time watching television than in any other leisure activity. In the last 20 years there has also been a general surge of interest in the performing arts, especially theatre.

Table 17.3 gives summary statistics on the performing arts in 1978. This was the first year that average attendance at Canadian performances exceeded attendance at those that were non-Canadian particularly in theatre. In the other performing arts Canadian content has been slower in achieving popularity but there are signs that the Canadian public is gradually being won over.

Formerly there was a tendency for companies with access to larger halls and larger markets to perform non-Canadian works. It was economically safer with works of proven box-office popularity and this generally meant non-Canadian.

In an effort to consolidate the hard won gains in Canadian theatre, the Canada Council in March 1979 for the first time endorsed the principle of assigning priority to Canadian plays and Canadian artists, and hiring Canadians for senior artistic and administrative positions in publicly funded theatres.

Economic picture. The performing arts cannot earn enough money even to come close to meeting expenses and depend on massive financial transfusions in grants and subsidies. This leaves them vulnerable to changing economic winds. Historically in

times of economic retrenchment the arts have been the first to suffer funding cuts. Rising costs and declining subsidies double the jeopardy.

Earned revenue is the income a performing arts organization generates from its own operations, primarily from box-office sales but also from such other sources as guarantees and program and beverage sales at performances. Generally the price of admission is reasonable when compared to other consumer costs. Average ticket prices in 1978 were: theatre, \$4.00; music concerts, \$5.61; dance, \$4.87; and opera, \$8.63.

Costs are escalating as in all sectors of the economy. In the performing arts expenses are rising faster than revenues. In 1978 the average cost per theatre performance was \$2,396. For a music concert it was \$10,288, for dance \$7,800 and for opera \$20,273. The income earned by theatre companies represented 51% of total revenue. Opera earned 53% of its revenue. Both music and dance failed to earn half of their total revenue, music 44% and dance 43%. The balance was subsidized.

Grants and subsidies come from two main sectors, public (governments) and private. On average, grants represented more than half (52%) the total revenue of performing arts organizations in 1978. Governments at all levels are the major benefactors. In 1978, 78% of all subsidies to the performing arts flowed from the public coffers. Of these 41% were federal, 27% provincial and 10% municipal. The remaining 22% came from the private sector. As government purse-strings tighten, private sector support is gaining attention. Main sources of private funds are foundations, corporations, individuals, fund raising campaigns by volunteer committees, bequests and endowments, bank interest and returns on investments. Nationally, the greatest private sector support in 1978 was from individuals, followed closely by corporations.

17.1.3 National Arts Centre (NAC)

Parliament passed the National Arts Centre Act in 1966 creating a corporation to operate and maintain the centre, to develop the performing arts in the national capital area, and to assist the Canada Council in the development of the performing arts elsewhere in Canada. The building designed by Montreal architect Fred Lebensold was opened to the public on May 31, 1969. It stands on Confederation Square in the heart of Ottawa, a series of hexagonal halls built on landscaped terraces along the Rideau Canal.

The NAC has three main halls. The Opera, with 2,300 seats, was designed primarily for opera and ballet, with a full-size orchestra pit and the most advanced sound, lighting and other technical equipment available. Its stage is one of the largest in the world, 58 by 34 metres, and its facilities can handle the most complicated changes required by the largest touring companies. The 950-seat Theatre is ideal for Greek, Elizabethan or contemporary plays, and its stage can easily be adjusted from the conventional rectangular style to the thrust stage style used for Shakespearean drama. Like the Opera, it is fully equipped for television, simultaneous translation and film projection, and its technical facilities are among the best available. The Studio is a hexagonal room which can seat up to 350 persons in a variety of seating plans. It is used for theatre productions, conferences and cabarets.

Other NAC facilities include: the Salon, a small hall seating up to 150 persons and used for chamber concerts, poetry readings and receptions; a 900-car indoor garage; Le Restaurant, a restaurant and bar; Le Café, a smaller restaurant which in summer overflows to the sidewalks along the Rideau Canal; and several large rehearsal halls. The building is ornamented with works of art. Its foyers are used for exhibits and public tours of the centre are offered daily. On the terraces outside, the NAC plays host to art fairs, craft markets and summer band concerts.

The 46-member National Arts Centre Orchestra performs some 40 concerts a year in the centre and many more each year on tours in Canada and abroad. Music programming includes about 70 concerts a year, featuring distinguished soloists and guest orchestras from Canada and around the world.

The theatre department offers several subscription series of English- and French-language plays, and also non-series productions. There are more than 400 performances of live theatre a year. Some plays are produced by the theatre department and others represent Canada's regional theatre or come from outside the country.

The theatre department tours Canada with productions from the subscription series and also forms small companies which perform in high schools and elsewhere, offering professional theatre in English and French. Workshops for students and teachers are among other NAC services.

The dance and variety department brings in some 100 different shows a year. The NAC is the only centre in Canada where every Canadian dance company of importance appears and has been a showcase for performers from every part of the country. Each year during July a festival of mainly musical entertainment is presented, centred around the NAC's own opera productions. Altogether, there are about 900 performances annually in the NAC, entertaining almost 800,000 people.

Support for the arts

17.2

The Canada Council

17.2.1

The Canada Council was created in 1957 by an act of Parliament to foster and promote the study and enjoyment of, and the production of works in the arts, humanities and social sciences. Under the provisions of the Government Organization (Scientific Activities) Act passed by Parliament in June 1977, the council's work in the humanities and social sciences became the responsibility of a new body, the Social Sciences and Humanities Research Council, on April 1, 1978.

The council offers a wide-ranging program of financial assistance and services to individuals and organizations in the arts. It also maintains the secretariat for the Canadian commission for UNESCO, administers the Killam program of scholarly support, funds an explorations program to assist projects on Canada's cultural and historical heritage and innovative creative projects and has some responsibility for promoting Canadian culture abroad.

The council is headed by a 21-member board appointed by the Government of Canada. Its decisions on policies and programs are implemented by a staff headed by a director and associate director, both appointed by the Government of Canada.

The council enjoys a large measure of autonomy, setting its own policies and developing and carrying out its own programs in consultation with the artistic community, represented by a 27-member advisory arts panel composed of Canadian artists in many disciplines. A large number of artists and arts-related professionals also serve on council juries, selection committees and advisory boards. The council works in close co-operation with federal and provincial cultural agencies and with a bureau of international co-operation of the external affairs department.

The council's income is derived from three sources: an annual parliamentary grant which amounted to \$39.2 million for the year ended March 31, 1979; interest from an endowment fund established by Parliament in 1957; and private funds willed or donated and used in accordance with the wishes of the donors.

In 1978-79 the council disbursed nearly \$42.5 million in grants and services to the arts, nearly \$4.7 million of the total to individual artists, nearly \$1.5 million for explorations grants, \$758,000 for an art bank, and \$2.4 million for a touring office. Total grants and services by category amounted to over \$10.4 million for music and opera, \$9.6 million for theatre, \$4.7 million for dance, \$4.9 million for visual arts and photography, \$2.0 million for film, video, audio and performance art, and \$8.8 million for writing, publishing and translation. The Killam scholarships funded by the late Mrs. Dorothy J. Killam support scholars of exceptional ability engaged in research projects of broad significance. In 1978-79, awards made under this program totalled \$1.2 million.

A number of small programs funded by the federal government or external sources are administered by the council. They include grants to Canadian cultural organizations for visits to Canada of distinguished foreign artists; grants for young Canadian artists wishing to study music, ballet or theatre in the USSR; and provision of studio space for Canadian visual artists in Paris and New York.

The council annually awards three \$20,000 prizes from the Molson Foundation for outstanding contributions in the arts, humanities and social sciences. The Governor General's literary awards financed by the council are awarded each year to six Canadian

writers. The council annually awards two translation prizes to the best English and French translations of Canadian works and two children's literature prizes to the year's best English and French books for young people. Co-sponsored by their respective governments and the Canadian government, a Canada-Australia literary prize and a Canada-Belgium literary prize are awarded in alternate years to a writer from each country. The council and the CBC co-sponsor national competitions for young composers and for amateur choirs.

The council gives financial support to the Jules Léger prize for new chamber music, administered by the Canadian Music Council, and co-sponsors with the Massey Foundation and the Canada Mortgage and Housing Corp. the Vincent Massey awards for excellence in the urban environment.

The council provides the budget and secretariat for the Canadian Commission for UNESCO (United Nations Educational, Scientific and Cultural Organization). The commission serves as a non-political liaison agency between UNESCO and Canadian public and private bodies and carries out a modest domestic program to further UNESCO objectives. It also administers council travel grants for Canadians serving as senior officers or board members of international non-government arts organizations.

17.2.2 Provincial aid to the arts

Newfoundland. The tourism department of Newfoundland and Labrador operates arts and culture centres at St. John's, Gander, Grand Falls, Corner Brook and Stephenville through its cultural affairs division. The division administers an annual arts and letters competition and a grants and awards program, open primarily to arts groups or organizations for various projects, and provides small sustaining grants to community arts councils and other arts organizations.

A cultural affairs division is responsible for the major programming in the arts and culture centres, ensuring that provincial, national and international companies and individual performers are available through the fall and winter theatrical seasons. The division administers a small acquisition fund enabling the province to add works by Newfoundland visual artists to its permanent collection.

Nova Scotia. The recreation department is responsible for cultural development, including music, theatre, crafts, multiculturalism, festivals, arts councils, dance, visual arts, writing, film and photography, the art bank and art gallery of Nova Scotia. The department supports eight cultural federations which act as service agencies for arts and cultural programs.

In the year ended March 31, 1979, grants to major cultural institutions amounted to \$590,050. Program and leadership grants awarded to community-based programs in the performing, visual and literary arts amounted to \$283,500.

The Nova Scotia museum section of the education department disbursed grants amounting to \$820,000 to local museums and historical societies. Other major cultural expenditures included over \$3.1 million for a provincial library (education department), \$365,000 for the archives and \$113,993 from the tourism department for festivals and other cultural events.

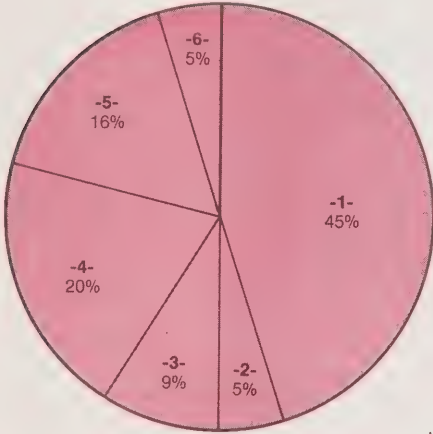
New Brunswick provides assistance to community cultural associations which sponsor activities in the performing and visual arts: NB Drama League, NB Federation of Music Festivals, Alliance chorale du Nouveau-Brunswick, Le Conseil de promotion et de diffusion de la culture, NB Folk Arts Council and art galleries.

The government assists in presentations of performing arts and co-ordinates exhibitions of work by New Brunswick artists. Groups receiving funds include the Atlantic Symphony, Theatre New Brunswick, Young Theatre New Brunswick, Théâtre populaire d'Acadie, Troupe folklorique du Madawaska, New Brunswick Youth Orchestra and New Brunswick String Quartet.

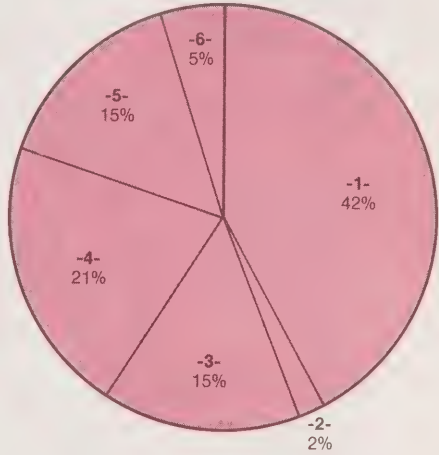
The province has an awards program for students wishing to pursue careers in the arts and provides help to artists or cultural association representatives to attend meetings and festivals. In the literary arts, a program of assistance to publishers is in operation as well as projects for writers in schools and communities.

Sources of revenue for performing arts companies, 1978

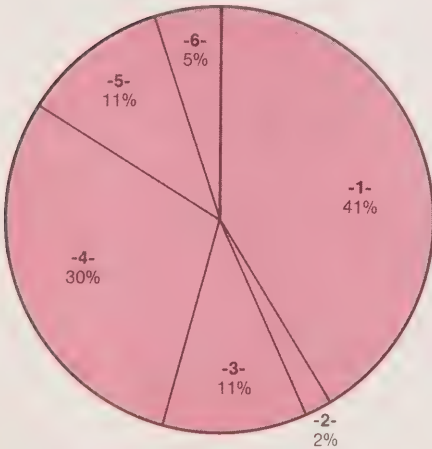
Theatre
92 companies
Total revenue \$34,172,175



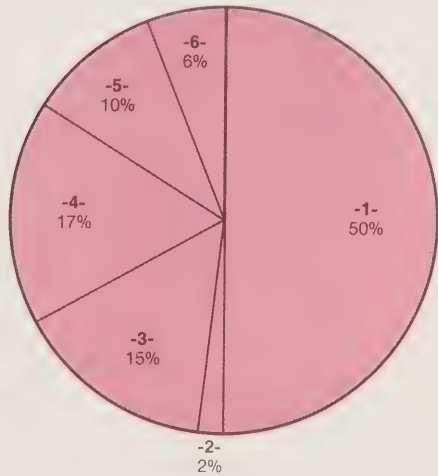
Music
34 companies
Total revenue \$19,719,656



Dance
21 companies
Total revenue \$11,994,363



Opera
6 companies
Total revenue \$6,943,066



- 1 - Earned revenue from major operations
- 2 - Sundry earned revenue
- 3 - Private sector donations
- 4 - Federal grants
- 5 - Provincial grants
- 6 - Municipal grants

Quebec. The cultural affairs department, charged with the administration of cultural organizations and institutions, concentrates on five programs: books and other printed material, conservation and development of cultural properties, visual arts, performing arts and administration of the department.

The book program aims to promote literary creation and production, to stimulate distribution of Quebec writing and ensure that it is conserved and read. The program assists publishing and sale of books, develops a network of public libraries, and preserves and makes accessible the Quebec literary heritage through the National Library of Quebec.

Through the conservation and development of cultural properties, technical assistance and expertise are provided to preserve and develop the historical heritage. Components involve the National Archives of Quebec, conservation of historical and archeological sites and properties, and recommendations to the department for conservation of cultural properties, made by the Cultural Properties Commission.

The visual arts program has a dual objective: conservation and dissemination of visual arts and promotion of creativity. This program includes the operation of the Musée du Québec and the Musée d'art contemporain, assistance to private museums and promotion of visual arts.

The program on performing arts is designed to train professionals in music, theatre and dance and provides funds to about 100 cultural organizations throughout Quebec.

Ontario. The ministry of culture and recreation, through its arts, sports and heritage divisions, offers numerous programs and services. Grants are allocated to: the Ontario Arts Council, the Royal Ontario Museum, the McMichael Canadian Collection of Art, the Art Gallery of Ontario, the Royal Botanical Gardens, CJRT-FM, the Ontario Educational Communications Authority and the Ontario Science Centre.

The ministry provides funds to organizations through OUTREACH programs, Festival Ontario and the Wintario lottery to support cultural and recreational activities.

Prime objectives of the arts division are to encourage the pursuit of excellence in the arts and promote wider participation in the enjoyment of arts activities.

A cultural industries branch sets policies of assistance for the film, recording and publishing industries. These are concentrated mainly in Toronto and have potential of becoming self-sustaining. A program of loan guarantees and interest subsidies for book publishing is administered with the co-operation of the Ontario Development Corp. The branch is investigating policies concerning private sector support of the arts in Ontario.

The sports and fitness unit encourages participation in an integrated program of physical, social and educational activities. It provides publicity material on recreation, sports and fitness, and consulting services and help to provincial sport-governing bodies and amateur games.

A citizenship division fosters full citizenship among Ontario residents with services to eliminate barriers to participation in community life. Among them are language and orientation classes for newcomers, free translation of trade and educational documents from other languages into English, and multilingual information and counselling services.

A heritage conservation division is responsible for protecting and preserving Ontario's heritage and historical resources. It supports the Ontario Heritage Foundation and administers Huronia Historical Parks including Sainte-Marie among the Hurons at Midland and the historic naval and military establishments at Penetanguishene, and Old Fort William.

Manitoba. The Manitoba Arts Council promotes the study, enjoyment, production and performance of works in the arts. It assists organizations involved in cultural development, provides grants, scholarships or loans to Manitobans for study or research in the arts and makes awards for outstanding accomplishment in the arts. Working on a budget of \$840,000, the council in the year ended March 31, 1978 made grants to 25 organizations including the Manitoba Theatre Centre, Rainbow Stage, the Royal Winnipeg Ballet and the Winnipeg Symphony Orchestra. The council's awards program provided assistance to individual Manitoba artists.

Saskatchewan. The Saskatchewan Arts Board makes opportunities available to Saskatchewan people to engage in drama, the visual arts, music, literature, handicrafts and other arts, provides leadership, and promotes high standards for arts activities.

The board, a provincial agency of 15 private citizens appointed by order-in-council, receives an appropriation from the legislative assembly, supplemented by earned revenue and donations. Advisory panels of professionals make recommendations on policy, artistic quality and merit.

Work of the board is carried out by a staff of consultants and office personnel. The consultants administer programs and services including a Saskatchewan school of the arts, a provincial collection of visual arts and crafts, a biennial performing arts conference and financial assistance programs for organizations and individual artists. A newsletter, *Saskatchewan arts*, promotes arts activities.

The budget in 1978-79 exceeded \$1 million, about one-half provided as support grants and the rest to offset the cost of a school of the arts and other activities.

Alberta. Alberta Culture offers education and resources programs to stimulate the cultural life of the province. Art distribution programs help Alberta artists and craftsmen to have their work exhibited.

Grants are given to organizations for arts projects, to public art galleries toward operating costs and to individuals for formal study. Travel grants help individuals and groups to take part in festivals, competitions, conferences and study tours. Community organizations may apply for interest-free loans to buy permanent equipment related to arts and crafts.

A performing arts branch encourages development of dance, drama and music. Educational programs are designed to develop occupational, recreational or therapeutic aspects of the performing arts. Residential summer schools include courses in drama at Drumheller and music at Camrose.

Community organizations may receive help to sponsor performing arts tours, and performing arts organizations may receive operational grants up to 25% of eligible expenditures.

The department encourages the development of Alberta writing, offering correspondence courses, writing workshops and competitions for playwrights and new Alberta novelists. Annual awards are given for the best books written in English by residents of Alberta. Scholarships enable writers to participate in writing seminars. Grants for authors, editors and writers ranging from \$1,000 to \$10,000 enable Alberta residents to research, write, or edit literary works.

Alberta publishers may apply for funds for publishing. Nominal grants to periodicals encourage better literary content through higher rates to authors.

A library services branch helps communities set up public library systems. A cultural heritage branch promotes an understanding of the cultural diversity of Alberta and provides grants for registered language schools and ethno-cultural periodicals.

The Jubilee auditoria in Calgary and Edmonton provide space and services for many activities. The Alberta government provides funds on a per capita basis for other communities to develop cultural facilities.

British Columbia. The British Columbia Cultural Fund was set up by statute in 1967. The act set aside \$5 million in an endowment fund; the interest was to be spent to stimulate the cultural development of BC people. An advisory committee was established to receive applications for cultural grants and to report their recommendations to the finance department. The amount of the endowment was raised to \$20 million in 1974. An advisory body, the British Columbia Arts Board, makes recommendations to the provincial government on the allocation of grants from the fund.

Museums and galleries

17.3

Museums of Canada range from collections of local historical artifacts and objects to large government-operated institutions. Many larger museums, especially the components of the National Museums of Canada and the Royal Ontario Museum, are

distinguished for research and publication of scholarly works and as cultural centres. They offer many services to the public through exhibits, guided tours, lectures and scientific and popular publications.

Direct work with schools may involve classes in the museum or visits of museum lecturers, with exhibits, to the schools. More informal are guided tours for visiting classes, loans of materials to schools, and training student-teachers in the educational use of the museum. For children, a number of museums have Saturday lectures and film showings, nature clubs and field excursions. Museum field parties provide research training to university students, and museum staffs act as professional consultants, answer inquiries and serve as advisers to foreign scholars and institutions.

For adults, museums offer lectures, film shows and guided tours. Staff members may give lectures to service clubs or other groups, and hobby clubs such as naturalist groups, mineral clubs and astronomy societies, which may be allowed to use the

The four national museums in Ottawa and the associate network of 21 major museums and galleries have common goals of preserving Canada's heritage and making it more accessible to a wider public. Travelling exhibits, educational programs and research facilities invite visitors to participate in learning more about the resources, development and cultural treasures of Canada.

museum as their headquarters. Travelling exhibits are prepared for local fairs, historical celebrations and conventions. Some Canadian museums have conducted regular radio or television programs. Some historical museums stage annual events where the arts, crafts or industries represented by the exhibits are demonstrated.

Public art galleries and art museums in the principal cities conduct Saturday classes and tours for school pupils and adults. Radio talks, lectures and concerts are provided by various galleries as well as travelling exhibitions for their surrounding areas. Several galleries maintain an art rental service. Table 17.4 gives the number of art galleries and museums and their location by region.

17.3.1 National Museums of Canada

The National Museums of Canada, a Crown corporation established in 1968 by the National Museums Act, incorporates in a single administration Canada's four major national museums, affiliated with a nationwide network of associate museums and exhibition centres. It administers a series of programs with main purposes to preserve and increase access to the treasures of the national heritage.

The four national museums in Ottawa are: the National Gallery; the National Museum of Man, which includes the Canadian War Museum; the National Museum of Natural Sciences; and the National Museum of Science and Technology, including the National Aeronautical Collection. Since 1972 the corporation has been implementing a national program under the national museum policy. Its aims are to increase public access to the collections and to help preserve them. The National Museum of Man and National Museum of Natural Sciences are served by the corporation's 180,000-volume library system.

17.3.2 National Gallery of Canada

The National Gallery of Canada marked its 100th anniversary in March 1980. Its beginnings are associated with the founding of the Royal Canadian Academy of Arts in 1880. In 1913, the National Gallery was incorporated by an act of Parliament and placed under the administration of a board of trustees. Its function was to encourage public interest in the arts and to promote the interests of art throughout the country.

The gallery's collections have been built up along international lines and indicate the origins of Canadian traditions. The collection of Canadian art, the most extensive in existence, is continually being augmented. Over 60% of all acquisitions since 1966 have been Canadian. There are now more than 18,000 works of art in the collections.

Included are many old masters, 12 having been acquired from the Liechtenstein collection. The Massey collection was presented to the gallery during 1946-50 by the Massey Foundation. The Vincent Massey bequest of 100 works was received in 1968. In 1974 a gift of drawings was donated by Mrs. Samuel Bronfman of Montreal in memory of her husband. There is a growing collection of contemporary art, prints and drawings, and diploma works of the Royal Canadian Academy. The gallery's collection of photographs contains 6,000 works. Gallery services include a public reference library containing more than 50,000 volumes and periodicals on art history and related subjects.

A program of exhibitions, lectures, films and guided tours is maintained for visitors. Interests of the country as a whole are served by circulating exhibitions, lecture tours, publications, reproductions and films prepared by the gallery staff. The gallery promotes interest in Canadian art abroad by participating in international exhibitions and by preparing major exhibitions of Canadian art in collaboration with the external affairs department. It also brings exhibitions from abroad for showing in Canada.

National Museum of Man

17.3.3

This museum conducts research in Canadian studies and collects, preserves and displays objects which make up Canada's cultural heritage. Its activities extend across the country through field research programs, travelling exhibitions and loans to various groups and institutions. Its staff includes archeologists, ethnologists, anthropologists, historians, folklorists, musicologists, curators and specialists in various other museum disciplines.

Eight permanent exhibition halls and one gallery for temporary exhibitions are open to the public at the Victoria Memorial Museum Building in Ottawa. The military collection is displayed at the Canadian War Museum, a division of the National Museum of Man.

Exhibition halls in the Victoria Memorial Museum Building show historical progression and continuity. On the ground floor, one describes man's development and universal patterns of existence from early times to the modern era. The next presents results of archeological research of pre-historic man in Canada, and includes a recreation of an excavation site of a Tsimshian Indian Village at Prince Rupert, BC.

Halls on the second and third floors are devoted to ethnology. One shows traditional life among the Inuit of Canada's far North and their adjustments to the contemporary world. Another deals with the past and present of the Iroquois living in the region of the Great Lakes and St. Lawrence River basin. The third offers a view of Indians of the central plains and the changes they have undergone in the past two centuries. The fourth presents the art of the Indians of the northwest coast, and portrays their environment, ceremonies and costumes.

In October 1977 Queen Elizabeth II inaugurated two more permanent halls. One depicts the arduous struggles of the first explorers and settlers who helped shape the Canadian identity. The other presents Canada's multicultural heritage in the form of a journey along the road of life.

To make its collections known across Canada, the museum produces films, publications and museum kits. Museum kits are developed around particular themes, and consist of artifacts and specimens, films, slides, cassettes, maps and informational literature.

National Museum of Natural Sciences

17.3.4

This museum has six divisions: botany, invertebrate zoology, vertebrate zoology, mineral sciences, paleobiology, and interpretation and extension.

Large reference collections are available to authorized persons for research projects. A national herbarium contains vascular plants, mosses and liverworts, lichens and algae. The zoological collections include molluscs, crustaceans, other invertebrates, fishes, reptiles, amphibians, birds and mammals. Extensive botanical and zoological studies and surveys are gradually increasing the knowledge of the natural heritage and adding to these systematic collections. A zooarcheological identification centre identifies animal remains found in archeological investigations. This can determine an animal species from a fragment of bone, and is of use to researchers in both natural and human history.

A national minerals collection includes catalogued specimens of gemstones and minerals. The museum also has specimens of rocks and ores from many regions of the world and extra-terrestrial specimens such as meteorites.

The vertebrate fossils collection includes many rare dinosaur fossils. Palaeontological activities have focused on the dinosaurs of the Cretaceous period in Alberta, the Pleistocene fauna of Saskatchewan and the unglaciated region of Yukon. The new science of palynology, the study of fossil pollen and spores, is proving effective in determining climatic conditions of the past, and contributes information to other areas of research such as hay fever and honey grading. The paleobiology division has a collection of slides of fossil fungi, and reference and exchange collections of fossil pollen.

An interpretation and extension division presents public lectures and films, activity workshops and interpretive lessons for teachers and students. It also provides a school loans service and develops educational resource materials and travelling and temporary exhibitions.

There are five permanent natural history exhibit halls in the Victoria Memorial Museum Building. One on the earth presents an explanation of the continental drift theory and illustrates the natural forces that have physically shaped the world. One on life through the ages shows how some of the plants and animals have adapted to changing circumstances through geologic times while others became extinct; this hall's dinosaur court features fossils poised amid the sub-tropical vegetation typical of Western Canada 75 million years ago. A hall of birds has many life-like dioramas showing the kinds of birds typical to nine of the major biological regions of Canada. Another has dioramas on mammals in Canada showing migration and defence against predators. A hall on animal life traces animal evolution through a 500 million-year period to the present, including the story of man's efforts to unravel the evolutionary threads that relate all of the world's animals to each other. An exhibit hall displays temporary and travelling exhibitions from the museum and elsewhere. Two more major halls on plant life and animals in nature are in preparation.

17.3.5 National Museum of Science and Technology

Most recently formed of the four national museums, the National Museum of Science and Technology opened in 1967. It has pioneered many new techniques. Participation and a sense of nearness to objects from steam locomotives to axes are features.

Exhibit pavilions contain examples from the history of ground transportation from sleighs to aviation and space. Trains have figured prominently both as acquisitions and in programs. Steam train excursions, operated in collaboration with the National Capital Commission, are popular summer events. There are also experiments and skill-trying tests in the physics hall and exhibits on the history of agriculture, marine transport, meteorology, time pieces and astronomy.

In the aeronautical collection at Rockcliffe Airport over 90 aircraft illustrate the progress of aviation and the importance of the flying machine in the development of Canada. Included is one of the world's largest collections of aircraft engines.

Tour guides conduct educational programs on topics for all age groups. The museum's observatory houses Canada's largest refracting telescope, used for evening educational programs. The museum's 16,500-volume branch library emphasizes a retrospective collection of Canadian aviation.

17.3.6 National programs

Four national programs provide services to the Canadian museum community.

The Canadian Conservation Institute (CCI) has as its main objectives: conservation of Canada's heritage collections, training in the methods of conservation, and research leading to the development of improved conservation techniques. The CCI treats works from institutions of all sizes and gives equal attention to objects of recognized national or local cultural value. Requests for treatment are channelled through regional advisory committees. The CCI's services are also available to institutions in the event of emergencies such as fire or flooding. The CCI launched its first mobile conservation laboratory in the Atlantic region in 1979.

Main activities of a national inventory program are: to develop in Canada comprehensive standards for the documentation of museum collections, to provide services to museums documenting their collections, and to apply automatic data processing techniques to improve collections management. The objective is to create a central inventory of public collections, which will facilitate collections management, exhibition planning, research and education. The service employs a computer with terminals in 35 locations from Victoria to St. John's; 150 institutions participate.

An international program promotes interest in international museum activities and facilitates international exchanges. It was instrumental in bringing the Treasures of Tutankhamun exhibition to the Art Gallery of Ontario in Toronto in 1979.

Museum assistance programs provide continuing help to designated institutions, which include associate museums, national exhibition centres and several other museums and organizations. In the associate museum network are 21 of the country's major museums and galleries, as well as the four national museums in Ottawa, with the common goals of preserving Canada's heritage and making it accessible to a wider public. Project assistance programs include capital grants and help for special activities, training, registration and exhibitions. The total grants budget was \$8.2 million in 1977-78 and \$9.4 million in 1978-79.

A mobile exhibits program includes museumobiles and the Discovery Train. Museumobiles exhibit artifacts and related materials mainly in smaller communities across Canada which lack ready access to major museums. Each museumobile caravan, consisting of three 13.7-metre trailers, depicts the geographic, archeological, social and natural history of a region of Canada. The Discovery Train, a five-year project operated under the mobile exhibits program, is a co-operative venture of the federal government, nine provincial governments, four corporate sponsors and four foundations. During its first season touring across Canada in 1978 the train drew more than 675,000 visitors in 20 cities.

Books

17.4

Book publishing

17.4.1

The book market in Canada is composed of books produced by Canadian publishers for domestic sale and books imported for sale in Canada. In 1978, these two categories achieved estimated sales of \$702.1 million, of which \$496.8 million came from imports. These were estimates of the domestic market evaluated at the first point of delivery; total estimates at the retail level were about \$980 million. Among imported books, 77% came from the United States, 10% from France and 8% from the United Kingdom.

Canadian-based publishers produced an estimated \$276.8 million worth of books including new titles, reprints and those for backlist sales. Of this, \$205.3 million was

In book publishing, 65% of the titles produced in Canada in 1978 were trade books. This is largely an export industry; three times as many copies were sold abroad as domestically. On the other hand, 70% of Canadians read books for leisure but a high proportion of the books they read were imported from the United States.

destined for domestic sale, an increase of 22% from 1977, and the remaining \$71.5 million for export, an increase of 27%.

Information collected from 130 publishers surveyed by Statistics Canada showed that their sales were \$121 million, including domestic sales of \$57.5 million, from the publication of 3,021 new titles. English-language books accounted for 80.9% of new titles sales revenue, French-language books for 18.1%, bilingual ones for 0.5% and books in other languages, 0.3%. In addition, 2,339 reprints generated sales of \$54.1 million. Tables 17.5 and 17.6 give data on a large proportion of books published and reprinted in 1976-78.

Textbooks. The 656 new textbook titles sold a total of 1.5 million copies and generated sales of \$7.6 million. Of these sales 22% came from elementary textbooks, 58% from secondary textbooks and 19% from post-secondary textbooks; 74% of the sales came from English-language textbooks.

On the whole, textbooks cost the publisher an average of \$16,518 to produce yet generate average revenue of only \$12,593. This apparent disparity between production costs and revenue can be attributed to the fact that textbooks have a longer useful life than general books and will continue to be sold for some time.

Trade books. This category included 1,926 or 65% of the new titles published. These accounted for 23.3 million copies sold and \$44.3 million in sales, or 77% of the total sales of new titles published in Canada; 83% of these sales were generated by English-language books.

The three main formats were mass-market paperback (48%), hardcover (20%) and other paperback (31%). Mass-market paperbacks accounted for the largest number of titles published, while hardcover books accounted for 50% of total domestic sales (\$20.3 million) due to their higher retail price.

Of these new titles 45% were novels, while 16% were general books.

One phenomenon peculiar to this category is exporting: approximately \$62.7 million worth of trade books were exported and three times as many copies were sold abroad as domestically.

Information books. This category includes professional and technical books, scholarly books and general reference books. The 413 new titles published accounted for \$5 million or 10% of total book sales. English-language books accounted for the vast majority (70%) of sales.

General reference books accounted for 54% of sales, followed closely by professional and technical books at 34%. General reference books had a higher average sold circulation than professional and technical books (2,929 copies as compared with 1,035). Scholarly books accounted for the largest number of titles published despite having the smallest circulation. In terms of content, 26% dealt with law, 14% with history and 6% with general subjects.

17.4.2 Copyright

Copyright protection is governed by the Copyright Act (RSC 1970, c.C-30) in force since 1924. Protection is automatic without any formality, although a system of voluntary registration is provided by the federal consumer and corporate affairs department. Copyright exists in Canada in every original literary, dramatic, musical and artistic work and in contrivances by means of which sounds may be mechanically reproduced. The term for which the copyright exists is, except as otherwise expressly provided by this act, the life of the author and a period of 50 years after death.

17.4.3 Survey of readers

Book reading habits were among the activities included in the survey of leisure activities conducted in conjunction with the Statistics Canada labour force survey in February 1978, which provided data given earlier in this chapter on the performing arts. The following highlights were extracted from the replies of a representative sample of Canadians surveyed.

In broad general terms, four in 10 Canadians read books in an average week. Seven in 10 read books at some time during a year. Age and education are primary influences on book reading habits. Generally the proportion of Canadians who read books decreases with advancing age. For the 15-24 age group the reading participation rate is well above average. There is a steady decline toward the average and below it in the 25-44 age group. The participation rate falls off rapidly from the age of 55 to 70 and over to far below the average. At all ages the proportion who read books is larger among those with higher education.

The survey indicates that in Canada as a whole, 71.9% of people read books for leisure, ranging from 65.9% in Quebec to 80.1% in British Columbia. Among all those

who read books, the amount of time spent reading is fairly consistent regardless of their level of education. The number of hours spent reading books varied from 5.7 a week in Quebec to 7.1 in British Columbia, with an average of 6.2 hours a week across Canada.

More women than men read books, according to the survey. Among the respondents, almost 50% of women read books regularly compared with just over 35% of all men. Only 6% of all the people surveyed said they read Canadian fiction regularly, and only 8% read Canadian non-fiction regularly, indicating the reliance on imports described in the section on book publishing.

Public archives and library services

17.5

The Public Archives of Canada

17.5.1

The archives, established in 1872, operates under the direction of the dominion archivist by authority of the Public Archives Act. As a research institution, it is responsible for acquiring all nationally significant documents relating to the development of Canada, and for providing research services and facilities to make this material available to the public. Administratively, it promotes efficiency and economy in the management of government records.

The archives branch is made up of eight divisions. The manuscript division contains manuscript collections; these include the private papers of statesmen and other distinguished citizens, records of cultural and commercial societies, and copies of records on Canada held in France, England and other countries. The public records division consists of selected records of all the departments and agencies of the federal government. The picture division has charge of documentary paintings, water-colours, engravings, heraldry and medals. The photography collection is responsible for a national collection of historical photographs. The film archives holds a wide range of films and sound recordings. The map collection has custody of thousands of maps and plans pertaining to the discovery, exploration and settlement of Canada and its topography, as well as many current topographical maps of foreign countries. The archives library contains more than 80,000 volumes on Canadian history, including numerous pamphlets, periodicals and government publications. A machine-readable archives division holds selected automated public records and machine-readable archives of permanent value from the private sector.

Although documents in the archives may not be taken out on loan, they may be consulted in the building and a 24-hour-a-day service is provided for accredited research workers. Reproductions of material are available for a moderate fee and many documents on microfilm may be obtained on interlibrary loan. Archival material is also presented on microfilm, slides and microfiche, as well as in various publications and travelling exhibitions.

The records management branch helps departments and agencies to establish their own records management programs. Its service includes recommendations and advice on scheduling and disposal of records. At the Ottawa, Toronto, Montreal, Vancouver, Winnipeg, Edmonton and Halifax records centres, it provides storage, reference service and planned and economical disposal of dormant records. Other regional centres are planned for other major cities.

The departmental administration branch, in addition to an extensive conservation and restoration program, provides a technical and advisory service on microfilming to government departments and agencies.

Branch offices of the archives are located in London, England and Paris, France. The archives also administers Laurier House in Ottawa as a historical museum.

The National Library of Canada

17.5.2

This library was formally established in 1953 by an act of Parliament; it absorbed a Canadian bibliographic centre which had been engaged in preliminary work and planning since 1950. The library is governed by the National Library Act, 1969, amended in 1977, which broadened the powers of the national librarian and established a national library advisory board of 18 members. The national librarian is responsible for

making facilities of the library available to the government and people of Canada and for co-ordinating federal government library services. He also administers legal deposit regulations, which require two copies of current Canadian publications to be deposited with the library.

A basic role of the national library is to support Canadian studies. Its collections and reference services are freely available to visiting researchers and to distant users through mail, telephone or telex. The library also facilitates the use of the nation's library resources through the co-ordination of a national system of interlibrary loan, with international interfaces, and the publication of union lists of the periodical holdings of Canadian libraries, and of inventories of research collections. Development at the library of a broad collection of foreign books, periodicals and government documents in the humanities and social sciences enables the library to give interlibrary loan service which supports research activities throughout the country.

The library's collection consists of more than 800,000 volumes of monographs, supplemented by microcopies of about 800,000 additional titles, over 9 000 metres of periodicals and the largest collection of Canadian newspapers in Canada. The library has holdings of Canadian, foreign and international official publications, and an extensive collection of Canadian music scores, recordings and manuscripts.

The national library assists other libraries in organizing their collections by making available current and retrospective bibliographic data in a variety of formats. Data for Canadian publications are created by the library itself, and data for foreign publications are provided from the international exchange of records in machine-readable form.

The Canadian bibliographic data are published in the national bibliography, *Canadiana*, which appears in tape, microfiche and printed editions and includes entries for Canadian trade publications, official publications of the federal government and the 10 provinces, theses, films and phonograph records produced in Canada, works by Canadians and material on Canada published abroad. More than 31,000 titles were included in 1979. Retrospective bibliographies are in progress; the first listings were scheduled for publication in mid-1980. The library is also co-operating in a project of the Canadian Institute for Historical Microreproduction to microfilm Canadian works published before 1900.

The library maintains a Canadian union catalogue, which provides a key to the main library resources of the country. This catalogue lists about 4 million volumes in almost 350 government, university, public and special libraries in all provinces. New accessions are reported regularly; these numbered about 850,000 in 1979-80. Since April 1980 incoming accessions have been entered directly on-line to the library's automated system, making it possible to cease filing cards and also to search by title and additional authors rather than by a single author only as before. The public services branch uses this catalogue to help it meet the requests sent in by Canadian libraries for location of materials. Automation of the union catalogue has facilitated the work of locating needed materials, as have the library's agreements with other systems.

The library provides for Canadian subscribers a computerized literature search service in the social and behavioural sciences and the humanities. This encompasses both a current awareness service and retrospective bibliographies prepared from various machine-readable data bases. A full-scale union list of social science and humanities serials was due for publication on microfiche in mid-1980.

The library also offers consultation in such fields as library automation, Canadian library developments and rare books, conservation and children's literature. It provides to provincial library agencies loan collections of books in languages other than English and French, and assists Canadian libraries to develop their collections by redistributing library materials through its Canadian book exchange centre. It has set up a group to study the development and co-ordination of national library and information networks in Canada. Implementation of an integrated library management system is enabling it to begin development of a network of federal government libraries. Internationally, it contributes to efforts at universal bibliographic control.

A list of books about Canada, prepared by the national library, is published in Appendix 6.

Public libraries**17.5.3**

Public libraries in Canada are organized under provincial legislation which specifies the method of establishment, the services to be provided and the means of support. Municipalities may organize and maintain public libraries or join together to form regional libraries according to provincial legislation. Provincial public library agencies advise local and regional libraries and distribute grants.

Table 17.8 gives summary statistics on 760 public libraries in 1977 and 916 in 1978, the increase in the latter year caused largely by a change in the reporting system for rural public libraries in Ontario. Book circulation was 116.2 million or 4.9 per capita in 1978. Operating payments of all public libraries amounted to \$199.3 million or \$6.81 per capita compared with \$5.80 in 1977. Full-time professional librarians numbered 1,694 in 1977 and 1,644 in 1978.

Canadian films**17.6****National Film Board****17.6.1**

In the 40 years since it was founded to serve as "the eyes of Canada" the National Film Board (NFB) has produced over 3,000 films, capturing scenes of the Canadian nation, depicting events that shaped history and showing the diversity of Canadian concerns, interests and achievements.

An agency of the federal government, the NFB was established by an act of Parliament in 1939 and reconstituted by the National Film Act in 1950 to initiate and promote the production and distribution of films in the national interest. The board's films are produced in Canada's two official languages and often a large number of films are still in active demand after 10 to 20 years. The board's head office is in Ottawa, with operational headquarters in Montreal, but in recent years production resources have been increased in regional centres across Canada. Connecting links have been set up between the centres and such regional agencies as local media, cable television companies, educational establishments, local cultural and film circles and provincial governments. One of the main features of regional activity has been a substantial involvement of local production companies from the private film industry, providing access to creative and technical resources at the local level and in turn providing Canadian film-making talent access to the national agency.

In 1978-79 for the first time in history the worldwide cumulative audience for NFB productions exceeded the mark of one billion viewers. About 25% of this cumulative audience was Canadian. The remaining 75% was comprised of audiences in about 80 countries around the world.

NFB films are distributed in 16 mm or 35 mm. In addition, all films are being converted to video cassettes which accounted for 7% of 16 mm prints sold by the NFB in 1977-78, mostly in the education and industrial markets. In 1978-79 the sales of video cassettes increased 37%, mostly to educational institutions.

The board also produces and distributes other visual aids such as silent and sound filmstrips, slide sets, overhead projectuals, multi-media kits and photo stories. In Canada the board's productions are distributed through community outlets, schools and universities, television stations, theatres and commercial sales. A large part of the 16 mm community film audience is reached through film libraries, film councils and special interest groups. During 1978-79 community film distribution through NFB libraries in Canada rose to 503,805 bookings, compared with 491,787 in 1977-78.

NFB films are seen outside Canada on television, in theatres, in schools and in libraries, with distribution handled by the board's offices in New York, Chicago, London, Paris and Sydney. As well, community distribution abroad is effected by 100 film libraries operated jointly with the external affairs department. For greater international distribution, many NFB films are versioned in foreign languages. The board, in co-operation with the federal government tourism office, distributes films supporting the travel industry to audiences throughout the world.

Each year, NFB films are presented at many national and international film festivals. In 1978-79, although it felt the pinch of government austerity in reduced funds

for production, the NFB participated in 79 festivals and received 106 awards for 47 films. This was a close second to the record-breaking achievements of 1977-78, when the board participated in 80 festivals and received 116 awards for 44 of its films. Highlights included the winning of two Oscars in the 1978 Academy Awards for *Sand Castle* as the best animated short film and *I'll Find a Way*, the best documentary short film.

In 1978-79 the NFB released 381 new films. Of these 278 were made by the NFB and 103 were produced under contract in the private sector through a sponsor program.

17.6.2 Canadian Film Development Corp.

The Canadian Film Development Corp. (CFDC) was established in March 1967 to promote the development of a feature film industry in Canada. The CFDC invests in Canadian productions in return for a share of the profits, makes loans to producers and assists financially in the promotion, marketing and distribution of feature films.

Feature film production in Canada reached record levels during the 1978-79 fiscal year. The CFDC participated financially in 27 of the movies produced, 17 in English and 10 in French with combined budgets of almost \$50.0 million, as compared with nearly \$5.5 million for 20 films in 1977-78. The corporation's share was \$5.6 million as against \$1.6 million the previous year. These were part of the total 120 English-language motion pictures and 101 French-language feature films for which the CFDC provided production assistance in its first 11 years of operation.

Of 16 new Canadian feature films shown in Canadian theatres in 1978-79, there were 11 produced with CFDC assistance, eight of them in the English language and three in French. Box-office receipts in Canada for the 16 films totalled almost \$6 million. Two movies in which the CFDC participated led the way. *Murder by Decree* took in \$1.8 million, and *In Praise of Older Women* grossed \$1.5 million. Both these films showed particular strength in the major cities of Vancouver, Calgary, Edmonton, Toronto, Ottawa and Montreal, where they ran consecutively for three months.

Besides the new movies, films released during the previous year such as *Why Shoot the Teacher*, *Who Has Seen the Wind*, *Outrageous* and *Rabid* continued their careers in the nation's theatres and helped swell total box-office returns for all Canadian features during the 1978-79 year to a record \$6.5 million, up almost 10% from 1977-78.

Investing in films. A capital cost allowance program was introduced in November 1974 to encourage investment in Canadian films. Under the federal income tax regulations, investors could claim 100% capital cost allowance for investments approved by the Canadian film certification office. By March 31, 1979 the office had certified 113 feature film productions and 1,228 short films and videotapes.

The certification process, by which films are judged Canadian and therefore eligible for the tax write-off, is based on a point system. A minimum of six points is required, with two points awarded if the director is Canadian or a naturalized citizen or landed immigrant, two points for a Canadian screenwriter, one point each for a Canadian photography director, music composer, art director, film editor, and the highest and second highest paid actors and actresses. The producer must be Canadian and at least 75% of all the costs for processing and final treatment of the film must be incurred in Canada. In addition, Canadians must receive payment for at least 75% of other services, such as cost, production crew, and post-production expenses.

This system makes Canada an attractive location for film production and particularly for American co-production ventures. Films can be made comparatively inexpensively, in part because of the depressed value of the Canadian dollar. One significant feature of the point certification system is not in what it stipulates but in the leeway it allows. This applies to the stars of the film. Under the present system a film can be certified Canadian and boast as its headliners internationally recognized and acclaimed stars to add to its saleability.

World distribution. The dramatic growth in production has been reflected in a corresponding upsurge in global sales and distribution of Canadian feature films. Prior to the 1979 Cannes Festival, producers reported sales of Canadian movies or co-productions to distributors and television networks around the world in the amount of

\$39 million. A dynamic program for the 1979 Cannes Festival resulted in heightened interest in Canadian movies and producers reported sales of \$22 million, an unheard of increase of 1,100% from the \$2 million in 1978.

Co-productions. Canada has co-production treaties with five countries, the United Kingdom, France, Israel, Italy and the Federal Republic of Germany. Acting on behalf of the secretary of state as administrator of these treaties, the CFDC received 13 applications during 1978-79, of which nine went into production. The total budget for these nine co-productions was \$30 million, with Canadian investors providing \$13.5 million.

Film Festivals Bureau

17.6.3

During 1978-79 the Film Festivals Bureau of the secretary of state department ensured Canadian participation in 127 film festivals (not all competitive) at which Canadian producers had 872 films screened and won 97 awards. In 1977-78 the bureau co-ordinated the participation of 563 Canadian film entries in 94 film festivals; 67 short films won 118 awards, eight feature films took 28 awards and four Canadian filmmakers were honoured with awards for their work.

Going to the movies

17.6.4

In 1978 receipts from admissions in Canada were \$241.9 million, of which nearly \$218.4 million were obtained by regular movie theatres and almost \$33.6 million by drive-in theatres (Table 17.11). The average admission price was \$2.68 (excluding taxes) in regular theatres.

During 1978, a total of 904 new feature films were distributed, of which 365 came from the United States, 190 from France, 90 from Canada, 55 from Italy, 36 from Germany, 20 from Britain and 148 from other countries. The greatest changes were in the increase of Canadian films from 24 in 1977 and the decline of American films from 490 in the 1977 total of 970 feature films.

Home entertainment and recreation

17.7

Communications services

17.7.1

Despite a wide variation in family incomes, almost all Canadians have access to television, radios and telephones. In fact, more Canadian households have television sets than telephones. Of 7.3 million households in Canada in May 1978, 97.3% had television sets, 98.4% had radios and 96.4% had telephones (Table 17.13). While there had been an increase of 4.2% in the number of households in a year, there had been overall increases of 11.1% of those that had acquired colour television, 10.2% in households connected to cable television and 8.3% among those with radio receivers.

TV viewing. The average Canadian spends twice as much time watching television as in any other leisure activity. Television, since its introduction to the commercial market, has been the major vehicle of what has come to be called popular culture. The wide range of programming — including sports, movies, news, public affairs, situation comedies, game shows and commercial messages — both reflect and mould viewer attitudes.

The decline in movie attendance in the last 20 years can be directly attributed to the capacity of television to offer entertainment. This includes movies normally seen in motion picture theatres as well as made-for-television movies. Less frequently televised are live performing arts events such as plays, operas, ballet and music concerts. While TV may not render them with quite the atmosphere of a concert hall or theatre, a greatly enlarged audience can enjoy their accessibility at home. Television has also cut into areas that were formerly the preserve of other communications media, such as newspapers and news magazines.

Although broadcasting regulations require a substantial amount of Canadian content in programs originating in Canada, more than 70% of TV viewing by English-speaking Canadians in the late 1970s was devoted to foreign programs, mostly

American and to a lesser extent British. In contrast almost two-thirds of the programs watched by French-speaking Canadians were of Canadian origin.

Many of the American programs came directly from US channels easily accessible to Canadians along the international border. Others came through cable television or were purchased by Canadian networks at nominal cost. US producers in a country with a population 10 times greater than that of Canada had recovered their substantial production expenditures through heavy advertising revenues.

Only the subsidized Canadian Broadcasting Corp. can afford to produce entertainment programs on the scale of American programming. National Film Board productions help to swell the Canadian content of part of the programming. In turn many of the CBC productions have been transcribed from videotape to 16 mm film for national distribution as described in the after-use program of the NFB.

17.7.2 Newspaper readers

Seven days a week, at all hours of the day and night, radio and television coverage is available to Canadian homes, reporting the latest news events breaking around the world. Newspapers could not compete with the immediacy of the electronic media, but have been forced to accept a changing role in order to survive. By providing fuller background to events than the electronic media, by supplying broader coverage and detail not suitable to the electronic media, newspapers have staked out new ground on which to co-exist with their more recent rivals.

Part of their changing role is embodied in the consumer-oriented preoccupation with lifestyles. Where once there were a few scattered newspaper stories on the economy, housing, health, travel and entertainment, now entire sections are produced by separate teams of writers telling how to raise children, plants, pets, or spare cash, how to repair appliances, cars or even broken marriages. Expert advice is offered on political, economic or social affairs. Even competing media — TV programs, movies, records and books — are popularized in picture and print.

For the majority of Canadians, reading the newspaper is as much a part of the daily regimen as going to work, eating and sleeping. The February 1978 survey of leisure activities showed that 83% of Canadians 15 years of age and over read newspapers. These readers spent almost five hours in the week with the paper, or about 42 minutes a day.

The general pattern of newspaper reading seems to be to turn to the two or three parts of the paper that hold a particular interest for the reader, and to skim over or disregard the rest. Table 17.15 shows the percentage of readers by age who expressed interest in various sections. About half of all Canadians regularly read the news. The differences in the overall reading habits of men and women are minimal. About 84% of men read newspapers, slightly more than the 82% of women. On average, men devoted 37 minutes a day to the paper, compared to 33 minutes for women.

In general about half of all Canadians regularly read the news given in newspapers. More people read local news than international. Women show more interest than men in local and regional news, but far fewer women read national or international news. Editorial pages attract attention from about one Canadian in four among both women and men.

However, two sections attract far more men than women: the financial and sports sections. Each of these is read on a regular basis by three times as many men as women. In contrast, nearly twice as many women as men turn to the arts and entertainment section, and eight times as many read the homemaking pages. The comics attract only 27% of women but 33% of men.

17.7.3 Phonograph records and tapes

Studies of leisure time activities show that about 60% of Canadians of 15 years and older listen to recorded music regularly, averaging about six hours a week each. Besides, almost all Canadians listen to the radio for an average of 18 hours a week, and about 80% of radio air time is comprised of music transmitted from records and tapes. CRTC regulations require that a minimum of 30% of the musical compositions broadcast by AM radio stations or network operations must be Canadian. To qualify a composition

must meet at least two of the following conditions: instrumentation or lyrics principally performed by a Canadian, music composed by a Canadian, lyrics written by a Canadian or the live performance wholly recorded in Canada.

Generally in 1978 Canadian-controlled companies in the domestic record industry produced a much higher proportion of Canadian-content recordings than foreign-controlled companies did, with a greater emphasis on country music. Foreign-controlled companies produced nearly all the classical and jazz recordings sold in Canada.

Most of the records and tapes sold in Canada are manufactured in Canada, unlike the mass market book trade in which imported books predominate. But many feature foreign musicians and singers recorded in foreign studios. These are produced from master tapes leased from foreign corporations.

Recreational equipment

17.7.4

Participation in some types of sport or recreation activities is shown in the ownership of recreational equipment. Data on this subject have been collected by a household facilities and equipment survey, conducted by Statistics Canada as a supplement to the monthly labour force survey.

In May 1978, 17% of households in Canada owned one or more pairs of cross-country skis and 14% owned one or more pairs of downhill skis. Quebec households had by far the highest percentage ownership of cross-country skis (31%), while in British Columbia only 6% and in Newfoundland 5% of households owned this type of ski. Ownership of downhill skis was most prevalent in Alberta (20% of households) and British Columbia (18%).

Ownership of adult-size bicycles rose dramatically from 28% of households in 1972 to 42% in 1978. The incidence of ownership was somewhat lower in the Atlantic provinces and British Columbia than in other parts of Canada. Overnight camping equipment also increased in popularity from 18% of households in 1971 to 27% in 1978. Ownership of overnight camping equipment was most common in Alberta (44%) and British Columbia (36%). Tents were by far the most common item, up to 17% of households in Canada in 1978 from 12% in 1971.

Boats are another popular recreation item, and 15% of households in Canada reported owning one or more boats of some kind in 1978. Ownership rates varied from 10% in Quebec to 22% in Newfoundland. Outboards remained the most common type of boat owned in many parts of Canada. Canoes were assuming increasing importance, particularly in Quebec where they had become the most commonly owned type of boat.

The ownership rate of vacation homes remained high in relation to other countries at 6%, but showed a slight overall decline across Canada between 1971 and 1978.

Fitness and amateur sport

17.8

Principal objectives of the federal fitness and amateur sport branch are to raise the physical fitness level of Canadians and improve their participation in active recreation and amateur sport.

Sport Canada is a program directorate that provides funds and services to improve the performance of Canadians at national and international levels of amateur sport. Two of the organizations funded are the National Sport and Recreation Centre, Inc. which provides office space and administrative services for national sport and recreation associations, and the Coaching Association of Canada which structures the development of volunteer coaches to standardized levels. A national coaching apprenticeship program seeks to develop coaches capable of producing world-class athletes. An officiating development program is being expanded, based on the philosophy that officiating is an integral part of amateur sport in Canada. Funds are available to universities to develop sport facilities to international standards and support is given to develop sports programs for the disabled.

Programs have been introduced to identify potential top gymnasts and swimmers. To help top athletes pursue athletic careers without financial hardship there is provision for living expenses, training allowances, lost time payments, tuition fees and facilities rental. Training camps are provided to prepare athletes for competition.

Sport Canada contributes to national sport championships and helps many athletes take part in international competitions. An international exchange program has enabled Canadian athletes to attend training camps and competitions in a number of countries. In return athletes from many of these countries have spent some time in Canada.

Canada Games is Canada's major national multi-sport competition held every second year. The fitness and amateur sport branch contributes toward facilities and operating costs.

Recreation Canada is a program directorate that seeks to increase awareness of the importance of fitness and physical recreation and encourages greater participation in these activities. Support has been given to organizations concerned with table tennis, badminton, synchronized swimming and the activities of such groups as boys and girls clubs, Girl Guides, Boy Scouts and the YMCA national council. Support was given to a project to plan changes in elementary school physical education programs, to national agencies concerned with physical activity and fitness levels of disabled Canadians, and to the annual Northern Games for native peoples.

The branch supports Sport Participation Canada, known by the slogan ParticipAction. This promotes virtually every physical activity among Canadians including jogging, bicycling, walking, skating, tennis, squash, sailing and cross-country skiing.

A fitness section encourages a healthy lifestyle through physical activity. Fitness levels of employees in government and the private sector are being measured, and on-the-job fitness programs have been launched for employee groups. Booklets, records and tapes have been produced to promote fitness breaks to replace traditional coffee breaks. Materials are available for Canadians of all ages from teenagers to senior citizens.

A national advisory council of fitness and amateur sport has 30 members representing all provinces and territories of Canada. The council meets three times a year to advise the minister responsible for fitness and amateur sport.

About 70,000 Canadians were interviewed in a research study on participation in fitness and amateur sports activities, conducted by the research section of the branch in collaboration with Statistics Canada. The survey indicated that 59% of the Canadian population over 14 years took part in at least one physical activity with swimming and walking being by far the two most popular activities.

17.9 Tourism

Tourism affects the lives of almost all Canadians. It has an impact on lifestyles and provides a change of pace from contemporary social pressures. It also can contribute to national unity by increasing understanding among people of different regions of the country.

Tourism is a major earner of foreign exchange for Canada and, given the propensity of Canadians to travel abroad, travel income from visitors is a key plus value in the international balance of payments. It was estimated that Canadians spent nearly \$4.0 billion on international trips in 1979 while non-resident visitors spent almost \$2.9 billion during their stay in Canada; the travel deficit of \$1.1 billion was about \$600 million less than the deficit in 1978.

Tourism is also a significant generator of domestic spending. In 1979 Canadians spent about \$9 billion travelling within Canada. Including both domestic and international expenditures, tourism was thus a business worth \$12 billion to Canada in 1979. This is equivalent to about 5% of the gross national product and generates directly or indirectly over 100,000 jobs or 9% of the Canadian labour force.

In 1979, preliminary figures showed that 12.3 million non-resident tourists staying one night or longer entered Canada, down 3.3% from 1978 and 12.2 million Canadian residents re-entered the country from international trips of one or more nights, down 9.6%.

Tourists from the United States decreased by 6.3% to 10.6 million in 1979. US tourists travelling by automobile decreased by 10.4% to 7.8 million entries while non-automobile tourists numbered 2.8 million, 7.3% above 1978. A record total of 2.0 million visitors from countries other than the United States entered Canada in 1979,

20.1% above 1978. Tourist entries from other countries excluding entries via the United States by land for less than 24 hours increased by 18.7% to 1.7 million. Among the top five tourist generating countries, visitors from the United Kingdom increased by 17.7% to 466,100, Federal Republic of Germany by 28.7% to 184,100, Japan by 17.7% to 122,700, France by 17.8% to 108,300 and the Netherlands by 17.5% to 89,800. Overseas tourists represented 13% of the total foreign tourists to Canada, 2% higher than in 1978 and 8% above the 1972 proportion.

In 1979, 10.4 million Canadian tourists returned from visits to the United States, down 10.6% from 1978. Canadians re-entering by automobile decreased by 18.0% to 6.8 million while 3.6 million tourists returning by other means of transportation, increased by 7.8% over 1978. For the first time in the 1970s the number of Canadian residents returning from countries other than the United States decreased by 2.8% to 1.8 million, with decreases recorded in every quarter of the year.

During 1979, the travel patterns between Canada and the United States were directly affected by gasoline supply problems and increased gasoline prices in the US during the first half of the year. Preliminary reports show that in most provinces the decrease in US tourists was more than offset by the growth in the number of overseas visitors and increased intra and interprovincial travel by Canadians. Travel patterns between Canada and countries other than the US were influenced by reduced value of the Canadian dollar compared to stronger currencies. This resulted in more expensive foreign travel for Canadian residents while Canada as a destination for many overseas residents became cheaper and thus more attractive.

Sources

- 17.1 - 17.1.2 Education, Science and Culture Division, Social Statistics Field, Statistics Canada.
- 17.1.3 Public Relations, National Arts Centre.
- 17.2.1 Public Relations, Canada Council.
- 17.2.2 Various provincial boards and departments.
- 17.3.1 - 17.3.6 Information Services, National Museums of Canada.
- 17.4 - 17.4.1 Education, Science and Culture Division, Social Statistics Field, Statistics Canada.
- 17.4.2 Communications Branch, Department of Consumer and Corporate Affairs.
- 17.4.3 Education, Science and Culture Division, Social Statistics Field, Statistics Canada.
- 17.5.1 Information Services, Public Archives of Canada.
- 17.5.2 Public Services Branch, National Library of Canada.
- 17.5.3 Education, Science and Culture Division, Social Statistics Field, Statistics Canada.
- 17.6.1 Public Relations, National Film Board of Canada.
- 17.6.2 Annual report, Canadian Film Development Corp., 1978-79.
- 17.6.3 Annual reports, Department of the Secretary of State, 1977-78 and 1978-79.
- 17.6.4 Merchandising and Services Division, Economic Statistics Field, Statistics Canada.
- 17.7.1 - 17.7.3 Annual report, Department of Communications; Education, Science and Culture Division, Social Statistics Field, Statistics Canada.
- 17.7.4 Consumer Income and Expenditure Division, Social Statistics Field, Statistics Canada.
- 17.8 Promotion and Communication, Fitness and Amateur Sport Branch, Department of Labour.
- 17.9 International Travel Section, Financial Flows and Multinational Enterprises Division, Economic Statistics Field, Statistics Canada.

Tables

..	not available	e	estimate
...	not appropriate or not applicable	p	preliminary
—	nil or zero	r	revised
--	too small to be expressed	certain tables may not add due to rounding	

17.1 Support to the arts, by the Canada Council, 1969-70 to 1978-79 (thousand dollars)

Item	1969-70	1970-71	1971-72	1972-73	1973-74
Visual arts and photography*	2,032	1,994	2,240	2,703	1,902
Film, video and audio and performance art	—	—	—	—	1,039
Writing, publishing and translation	520	637	819	1,793	2,691
Music and opera	2,939	3,091	3,687	4,243	4,764
Theatre	2,815	3,282	4,008	3,903	4,358
Dance	1,106	1,265	1,315	1,617	1,976
Multimedia	—	—	—	—	—
Touring office grants	—	—	—	—	465
Art bank purchases	—	—	—	—	791
Explorations program*	—	—	—	—	500
	1974-75	1975-76	1976-77	1977-78	1978-79 ¹
Visual arts and photography*	2,433	3,016	3,633	3,884	4,210
Film, video and audio and performance art	1,387	1,332	1,531	1,662	2,011
Writing, publishing and translation	3,332	5,208	5,845	6,585	8,820
Music and opera	5,504	6,964	7,733	8,012	9,726
Theatre	4,816	7,235	7,818	9,464	8,893
Dance	2,304	4,119	2,569	3,842	4,007
Multimedia	—	—	—	95	156
Touring office grants	809	1,200	2,027	2,192	2,446
Art bank purchases	800	756	755	693	758
Explorations program*	513	616	647	693	1,461

¹Due to changes in accounting policies, certain prior years' commitments have been added to the actual expenses of 1978-79. These amounts would reduce the expenses of 1973-74 to 1977-78.

*Up to 1973-74, includes film and video.

*Up to 1978-79, includes half of amount granted each year (other half expended under humanities and social sciences program).

17.2 Average grants, revenues and expenditures of the performing arts by company, spectator and by discipline¹, 1977 and 1978

Year and discipline	By company			By spectator		
	Grants \$	Revenues ² \$	Expenditures \$	Grants \$	Revenues ² \$	Expenditures \$
1977						
Theatre	200,766	410,273	406,339	3.62	7.39	7.32
Music	297,888	521,737	516,817	5.37	9.40	9.31
Dance	330,622	590,480	591,770	6.46	11.53	11.56
Opera	435,176	864,579	849,613	8.43	16.75	16.46
1978						
Theatre	210,111	434,871	447,302	3.97	8.22	8.45
Music	334,433	594,837	616,546	7.21	12.82	13.29
Dance	387,128	695,014	711,316	6.70	12.03	12.32
Opera	546,221	1,157,178	1,236,663	7.72	16.35	17.47

¹Survey results from 71 theatre companies, 31 orchestras, 16 dance companies and six opera companies.

²Includes average grants.

17.3 Summary statistics on the performing arts, 1978

	Theatre	Music	Dance	Opera
Organizations	92	34	21	6
Performances	16,111	1,935	1,759	361
Average performances per organizations	175	57	84	60
Performances on tour (%)	29	10	44	31
Canadian content performances	9,022	948	1,425	—
Non-Canadian content performances	7,089	987	334	361
Revenue by source (%)				
Ticket sales	41	28	30	42
Guarantees	4	14	11	8
Sundry income	5	2	2	2
Grants	49	56	57	47
Increase in total revenue (%)	6	14	18	34
Increase in total expenses (%)	10	19	20	45
Average cost of a performance (\$)	2,396	10,288	7,800	20,273
Average ticket prices (\$) ¹	4.00	5.61	4.87	8.63

¹Includes program and beverage sales.

17.4 Distribution of large cultural institutions¹, by region and type, 1976

Region	Type of museum				
	Art museum or gallery	Restoration ²	Science Technology ³	Living ⁴	History
Atlantic provinces	3	11	—	1	1
Quebec	4	4	1	7	1
Ontario	14	14	2	6	4
Prairie provinces	4	5	2	6	2
British Columbia	3	5	5	5	1
Yukon and Northwest Territories	—	1	—	—	—
Canada	28	40	10	25	9
	Type of museum				
	General ⁵	Community ⁶	Archives	Other ⁷	Total
Atlantic provinces	2	1	2	1	22
Quebec	—	1	—	2	20
Ontario	1	2	5	5	53
Prairie provinces	4	—	3	—	26
British Columbia	1	—	2	—	22
Yukon and Northwest Territories	1	—	1	—	3
Canada	9	4	13	8	146

¹Expenditures over \$100,000.²Includes individual building and historic community restorations.³Includes science and technology museums, planetaria and observatories.⁴Includes aquaria, botanical gardens, arboretums, conservatories and zoos.⁵Includes more than one category of collection (archeology, entomology, ethnology).⁶Includes artifacts of relative recent history, from a specific geographic area.⁷Includes nature park museums or nature centres.17.5 Books published and reprinted¹, by language and commercial category, 1976-78

Year and item	Commercial category						
	Multi-volume reference	Textbook Kinder- garten to grade 3	Grades 4-6	Grades 7-9	Grades 10-13	Post- second- ary	Total
1976							
Titles published							
English	49	77	70	89	142	121	499
French	58	24	63	32	25	74	218
Bilingual	3	—	—	—	1	—	1
Other	—	—	—	1	4	3	8
Total	110	101	133	122	172	198	726
Titles reprinted							
English	42	214	218	181	261	67	941
French	7	75	61	38	46	59	279
Bilingual	1	—	—	—	3	3	6
Other	1	1	—	—	1	—	2
Total	51	290	279	219	311	129	1,228
	Professional and technical	Schol- arly	Trade book Chil- dren's	Juvenile	Adult	Total	Total all categories
Titles published							
English	114	213	49	17	741	807	1,682
French	20	45	49	7	271	327	668
Bilingual	4	10	—	—	16	16	34
Other	—	—	—	—	19	19	27
Total	138	268	98	24	1,047	1,169	2,411
Titles reprinted							
English	108	68	36	7	341	384	1,543
French	1	14	9	2	177	188	489
Bilingual	1	1	—	—	6	6	15
Other	—	1	1	—	1	2	6
Total	110	84	46	9	525	580	2,053
	Multi-volume reference	Textbook Kinder- garten to grade 3	Grades 4-6	Grades 7-9	Grades 10-13	Post- second- ary	Total
1977							
Titles published							
English	102	162	116	141	253	173	845
French	104	68	108	74	51	91	392
Bilingual	6	—	—	—	5	4	9
Other	—	—	—	1	4	3	8
Total	212	230	224	216	313	271	1,254

17.5 Books published and reprinted¹, by language and commercial category, 1976-78 (concluded)

Year and item	Commercial category						
	Multi-volume reference	Textbook Kinder- garten to grade 3	Grades 4-6	Grades 7-9	Grades 10-13	Post- second- ary	Total
1977 (concluded)							
Titles reprinted							
English	53	281	273	256	385	125	1,320
French	8	95	104	58	85	99	441
Bilingual	1	—	—	3	9	6	18
Other	1	1	—	—	1	—	2
Total	63	377	377	317	480	230	1,781
	Professional and technical	Schol- arly	Trade book Chil- dren's	Juvenile	Adult	Total	Total all categories
Titles published							
English	210	359	92	41	1,293	1,426	2,942
French	38	89	97	23	447	567	1,190
Bilingual	6	14	—	—	20	20	55
Other	—	5	—	—	24	24	37
Total	254	467	189	64	1,784	2,037	4,224
Titles reprinted							
English	132	122	53	12	539	604	2,231
French	4	22	15	3	250	268	743
Bilingual	2	3	—	—	9	9	33
Other	—	1	1	—	2	3	7
Total	138	148	69	15	800	884	3,014
	Multi-volume reference	Textbook Kinder- garten to grade 3	Grades 4-6	Grades 7-9	Grades 10-13	Post- second- ary	Total
1978							
Titles published							
English	29	78	71	94	94	67	433
French	38	40	60	45	46	55	284
Bilingual	2	—	—	2	1	1	6
Other	5	—	—	—	—	1	6
Total	74	118	131	141	141	124	729
Titles reprinted							
English	15	192	147	142	210	76	782
French	18	80	64	27	42	62	293
Bilingual	—	—	—	4	6	2	12
Other	—	—	—	—	—	—	—
Total	33	272	211	173	258	140	1,087
	Professional and technical	Schol- arly	Trade book Chil- dren's	Juvenile	Adult	Total	Total all categories
Titles published							
English	117	164	70	45	1,449	1,845	2,278
French	17	30	48	21	272	388	672
Bilingual	3	2	2	—	5	12	18
Other	—	3	2	—	2	7	13
Total	137	199	122	66	1,728	2,252	2,981
Titles reprinted							
English	33	41	30	4	217	325	1,107
French	3	16	16	2	152	189	482
Bilingual	1	—	—	—	3	4	16
Other	—	1	—	—	1	2	2
Total	37	58	46	6	373	520	1,607

¹Represents 75% to 80% of all titles actually published and reprinted. The text shows complete coverage.

17.6 Books published and reprinted¹ and copies sold, by language, according to UNESCO classification, 1976-78 (continued)

Year and UNESCO classification	Titles					Copies sold	Other Reprinted	Copies sold
	English Reprinted	English Published	French Reprinted	Bilingual Reprinted	Other Published			
1976 (concluded)								
Engineering, technology	55		28	—	—	26,241	—	—
Agriculture, stockbreeding	4		3	—	—	10,682	—	—
Domestic science, hotel management	12		28	—	—	104,569	—	—
Business management	89		30	1	—	600	—	—
Urban planning, fine arts	18		4	—	—	88,792	—	—
Minor arts/fine arts	—		—	—	—	5,040	—	—
Entertainment, hobbies	32		37	—	—	109,848	—	—
Literary history and criticism	12		2	—	—	165	—	—
Literature								
Novels, short stories	235		27	2	2	102,427	382	382
Poetry	3		2	—	—	1,982	—	—
Drama	19		—	—	—	—	—	—
Anthology	19		—	—	—	—	—	—
Geography, travel	72		13	—	—	44,290	—	—
History, biography	129		4	—	—	9,351	—	—
Non-specified	1		2	—	—	5,149	—	—
Total	1,544		490	15	6	2,041,176	29,162	7,221
	English Published	Copies sold	French Published	Bilingual Published	Other Published	Copies sold	Copies sold	Copies sold
1977								
General	153	3,196,524	55	9	1	132,499	8,699	—
Philosophy, psychology	32	109,993	60	2	7	73,922	93	—
Religion, theology	42	27,918	44	—	—	86,098	—	1,685
Sociology, statistics	52	24,637	13	2	—	9,462	4	—
Political science, economics	207	251,226	31	1	1	22,410	—	—
Law, public administration	208	195,883	46	9	—	34,069	1,115	—
Military science, national defence	1	750	—	—	—	—	—	—
Science of education	61	13,157	67	—	—	87,743	—	—
Political-economic aspects of trade	23	39,960	3	1	—	479	—	—
Ethnography, social anthropology	60	78,980	13	2	1	536	—	—
Linguistics, philology	200	296,971	172	8	7	66,342	7,384	384
Mathematics, accounting	129	103,525	117	—	—	38,052	—	—
Natural science	165	189,836	53	4	—	32,754	150	—
Medical science	32	43,419	36	—	—	34,717	—	—
Engineering, technology	44	72,147	43	—	—	31,638	—	—
Agriculture, stockbreeding	14	15,206	11	—	—	18,064	—	—
Domestic science, hotel management	35	25,227	26	1	—	62,077	—	—
Business management	111	158,649	42	4	—	24,677	—	—
Town planning, fine arts	26	23,600	2	—	—	9,889	3,550	2,800
Minor arts/fine arts	69	168,655	22	5	1	9,837	1,723	—
Entertainment, hobbies	121	301,380	84	2	—	91,237	2,476	—
Literary history and criticism	73	15,926	39	—	—	13,235	—	—
Literature								
Novels, short stories	388	74,818,019	138	—	11	53,323	4,369	4,369
Poetry	117	131,322	35	1	—	5,240	—	—
Drama	48	2,008	2	—	—	411	—	—
Anthology	41	54,415	11	—	2	693	—	—

17.6 Books published and reprinted¹ and copies sold, by language, according to UNESCO classification, 1976-78 (continued)

Year and UNESCO classification	Titles		English			French			Bilingual			Other		
		Reprinted	Copies sold	Reprinted	Copies sold	Reprinted	Copies sold	Reprinted	Copies sold	Reprinted	Copies sold	Reprinted	Copies sold	
1978 (continued)														
Sociology, statistics		30	42,764	12	8,706					1	34			
Political science, economics		101	137,878	27	55,141					1				
Law, public administration		109	180,534	13	19,440					2	5,300			
Military science, national defence		2	3,447	—	—					—	—			
Science of education		12	26,972	16	11,176					—	—			
Political-economic aspects of trade		9	7,230	—	—					—	—			
Ethnography, social anthropology		38	151,340	11	8,139					2	13,600		9,400	
Linguistics, philology		141	540,663	74	105,735					3	6,737		247	
Mathematics, accounting		33	45,722	59	136,806					1	7,213			
Natural science		62	213,416	34	16,912					1	149		2,759	
Medical science		14	45,093	12	34,177					—	—			
Engineering, technology		22	137,086	21	14,807					1	88			
Agriculture, stockbreeding		14	57,199	—	—					—	—			
Domestic science, hotel management		11	62,092	23	105,463					1	30,753			
Business management		82	172,533	20	28,120					1	200			
Town planning, fine arts		3	3,974	3	3,692					2	5,020			
Minor arts/fine arts		30	122,892	9	37,916					—	—			
Entertainment, hobbies		49	488,578	28	106,037					—	—			
Literary history and criticism		45	22,210	11	7,205					—	—			
Literature														
Novels, short stories		778	83,766,895	120	831,415					—	—	1	459	
Poetry		40	67,252	11	13,155					—	—	2	233	
Drama		41	6,163	—	—					—	—	—	—	
Anthology		20	764,901	6	181,173					—	—	—	—	
Geography, travel		52	184,317	16	64,628					—	—	—	—	
History, biography		186	1,076,995	59	139,793					1	1,500	5	54,374	
Non-specified		9	76,441	1	3,547					1	5,000	—	—	
Total		2,295	91,897,100	676	2,510,212					21	80,625	14	86,250	

17.6 Books published and reprinted¹ and copies sold, by language, according to UNESCO classification, 1976-78 (concluded)

Year and UNESCO classification	Titles					
	English Published	Copies sold	French Published	Copies sold	Bilingual Published	Copies sold
1978 (concluded)						
Business management	23	222,956	27	87,597	—	—
Town planning, fine arts	10	18,323	1	749	—	—
Minor arts/fine arts	178	601,327	33	117,163	2	2,295
Entertainment, hobbies	2	7,170	2	23	—	—
Literary history and criticism	7	8,785	—	—	—	—
Literature						
Novels, short stories	23	180,987	7	54,402	—	—
Poetry	53	311,408	8	22,848	—	540
Drama	98	247,001	17	43,119	—	—
Anthology	—	—	—	—	—	—
Geography, travel	—	—	—	—	—	—
History, biography	10	29,131	1	867	—	—
Non-specified	8	30,340	30	154,979	—	—
Total	1,158	7,382,533	595	2,703,287	17	185,743
					2	2,195

¹See footnote 1, Table 17.5.

17.7 National library growth in titles and loans over 10 years, 1969-70 to 1978-79

Fiscal year	Legal deposit titles	Relative change (1969-70 = 100)	Interlibrary loan requests ¹	Relative change (1969-70 = 100)
1969-70	8,941 ^a	100.0	79,765	100.0
1970-71	9,718	108.7	92,494	116.0
1971-72	11,127	124.4	104,127	130.5
1972-73	11,818	132.2	105,992	132.9
1973-74	14,494	162.1	113,293	142.0
1974-75	14,790	165.4	120,838	151.5
1975-76	14,145	158.2	124,448	156.0
1976-77	15,061	168.4	125,970	157.9
1977-78	16,282 ^a	182.1	130,250	163.3
1978-79	17,852	199.7	133,665	167.6

Items listed in *Canadiana*

Calendar year	Number	Relative change (1969 = 100)	Calendar year	Number	Relative change (1969)
1969	13,594	100.0	1974	30,439	223.9
1970	16,121	118.6	1975	27,820	204.6
1971	18,503	136.1	1976	25,137	184.9
1972	24,097	177.3	1977	28,512	209.7
1973	25,431	187.1	1978	28,729	211.3

¹Totals for certain years obtained by extrapolation.^aDeposit extended to recordings, Sept. 1, 1969.^bDeposit extended to educational kits, Jan. 1, 1978.**17.8 Summary statistics of public libraries, 1977 and 1978**

Year, province or territory	Population ¹ '000	Libraries reporting ²	Bookstock ³	Circulation	Total operating expenditure \$	Full-time professional librarians
1977						
Newfoundland	564	4	731,946	2,051,716	2,063,562	11
Prince Edward Island	120	1	173,676	523,649	730,400	9
Nova Scotia	835	12	944,714	3,367,238	3,685,402	51
New Brunswick	687	6	841,788	2,236,814	2,940,386	37
Quebec	6,278	100	6,039,263	13,955,576	16,420,045	187
Ontario	8,354	365	19,713,454	53,547,849	97,210,323	967
Manitoba	1,029	29	1,425,515	4,422,995	4,914,760	40
Saskatchewan	937	10	1,867,051	5,810,347	8,759,976	82
Alberta	1,896	167	3,303,536	9,828,885	12,666,442	79
British Columbia	2,494	64	4,301,057	18,662,518	23,740,927	225
Yukon	21	1	127,633	128,984	480,125	3
Northwest Territories	43	1	88,290	111,523	381,216	3
Canada	23,258	760	39,577,923	114,648,094	173,993,564	1,694
1978						
Newfoundland	569	5	657,541	1,728,258	2,297,354	13
Prince Edward Island	122	1	181,998	540,827	797,576	9
Nova Scotia	841	12	985,764	3,327,741	4,105,450	52
New Brunswick	695	6	897,139	2,306,864	3,292,122	36
Quebec	6,273	96	6,380,484	13,367,159	23,796,566	131
Ontario	8,444	520	20,129,098	54,156,432	106,703,426	952
Manitoba	1,033	29	1,471,353	4,507,078	5,292,633	38
Saskatchewan	948	10	1,987,878	5,970,395	10,211,288	89
Alberta	1,954	170	3,563,104	10,268,107	15,848,799	84
British Columbia	2,530	65	4,668,651	19,747,868	25,967,737	235
Yukon	22	1	133,898	132,523	630,700	3
Northwest Territories	44	1	92,041	119,981	315,525	2
Canada	23,475	916	41,148,949	116,173,233	199,259,176	1,644

¹Intercensal estimate, June 1978.²For 1978 there is a change in Ontario's reporting system for rural public libraries.³Books and other materials catalogued as books; does not include periodicals and newspaper titles.**17.9 Country of origin of new feature films distributed in Canada, 1977 and 1978**

Country	1977		1978	
	Number	% of total	Number	% of total
Canada	24	2.5	90	9.9
France	223	23.0	190	21.0
Germany	27	2.8	36	4.0
Great Britain	26	2.7	20	2.2
Italy	51	5.2	55	6.1
United States	490	50.5	365	40.4
Other	129	13.3	148	16.4
Total	970	100.0	904	100.0

17.10 National Film Board productions, distribution summary, 1977-79

	Canada		Abroad	
	1977-78	1978-79	1977-78	1978-79
Number of prints sold:				
16mm prints	10,304	10,174	8,724	9,906
Filmstrips	28,856	8,953	7,085	6,371
Slide sets	5,711	3,682	650	1,388
8mm prints	1,102	193	5,762	2,946
Multimedia kits	998	274	150	152
Overhead projectals	305	79	—	—
Videocassettes	—	964	—	99
16mm prints (through External Affairs/NFB joint program)	19,805	11,163	14,720	9,686
Number of prints loaned:				
Bookings of 16mm prints through NFB offices	491,787	503,805	...	...
through libraries under contract	74,239	93,906	...	...
through External Affairs and other agencies	...	...	227,329	207,742
Theatre bookings:				
35mm and 16mm	13,958	6,662	...	...
Titles sold	...	...	271	147
Titles on contract	...	...	3,508	3,614
Television:				
Telecasts (including travel)	10,842	9,981	22,734	...
Titles sold	...	...	399	335
Titles on contract	...	...	9,398	9,733
Non-commercial bookings	...	...	206	...

17.11 Receipts, taxes and paid admissions of motion picture and drive-in theatres, 1973-78

Year	Motion picture theatres		Drive-in theatres	
	Admission receipts and taxes \$'000	Paid admissions '000	Admission receipts and taxes \$'000	Paid admissions '000
1973	139,541	77,438	22,171	11,581
1974	160,904	79,020	24,563	11,372
1975	195,545	84,161	31,256	12,843
1976	206,356	82,328	33,678	13,048
1977	210,342	76,455	33,424	11,779
1978	228,135	81,597	34,739	11,634

17.12 Average admission prices in motion picture theatres, total number of admissions and total revenues from ticket sales, 1950-78

Year	Admission receipts		Amusement taxes		Number of paid admissions		Average admission price (Regular theatres only) ¹
	Regular theatres \$'000	Drive-ins \$'000	Regular theatres \$'000	Drive-ins \$'000	Regular theatres \$'000	Drive-ins \$'000	
1950	82,708	2,291	11,445	300	231,747	4,943	.36
1951	90,986	3,348	11,374	407	239,132	6,555	.38
1952	98,851	4,409	12,308	540	247,733	8,380	.40
1953	100,889	5,863	12,760	685	241,183	11,135	.42
1954	97,012	6,317	12,099	722	218,509	12,380	.44
1955	86,374	5,755	10,264	602	184,968	10,688	.47
1956	80,666	5,394	8,675	520	162,859	9,706	.50
1957	76,488	5,725	7,815	520	146,756	9,946	.52
1958	75,139	6,254	6,951	504	136,335	10,149	.55
1959	68,370	7,144	5,960	504	118,633	10,226	.58
1960	65,505	6,790	5,365	524	107,705	10,029	.61
1961	62,229	6,653	5,044	491	97,945	9,474	.64
1962	60,941	6,807	4,371	399	91,258	9,586	.67
1963	63,816	7,825	4,371	396	87,967	9,922	.72
1964	69,325	9,023	4,595	408	90,913	10,814	.76
1965	75,372	9,790	5,082	505	89,135	10,780	.85
1966	83,005	11,362	5,852	666	87,694	11,265	.95
1967	90,805	12,759	6,429	787	85,531	12,042	1.06
1968	99,042	14,656	7,268	932	84,937	12,252	1.17
1969	102,363	15,658	7,485	1,033	78,918	11,308	1.30
1970	111,692	17,047	8,111	1,118	80,826	11,489	1.38
1971	...	...	...	...	...	...	...
1972	122,492	17,881	8,907	1,172	81,241	10,559	1.51
1973	129,876	20,726	9,665	1,445	77,438	11,581	1.68
1974	149,720	22,963	11,184	1,600	79,020	11,372	1.89
1975	182,139	29,283	13,406	1,973	84,161	12,843	2.16
1976	192,462	31,573	14,094	2,105	82,328	13,048	2.34
1977	197,813	31,880	12,529	1,544	76,455	11,779	2.59
1978	218,358	33,557	9,777	1,182	81,597	11,634	2.68

¹Admission receipts excluding taxes divided by number of paid admissions.

17.13 Canadian households with communications services, 1978

	Number of households	% of total households	Change from 1977	
			Number	%
Television	7,121,000 ¹	97.3	299,000	4.4
Colour	5,294,000	72.3	530,000	11.1
Black and white	3,819,000	52.2	-133,000	-3.4
Radio (AM and FM)	7,206,000 ¹	98.4	324,000	8.3
Telephone	7,063,000 ¹	96.5	292,000	4.3
Cable television	3,625,000	49.5	337,000	10.2
Total Canadian households	7,320,000	100.0	298,000	4.2

¹Includes households with one or more (TV, radio or phone, according to category).**17.14 Freelance payments, CBC radio and television, fiscal years ended Mar. 31, 1978 and 1979 (thousand dollars)**

Year and item	Atlantic provinces	Quebec	Ontario	Prairie provinces	British Columbia	YT and NWT	Radio-Canada International	Total cost
1978								
Musicians' fees	757	3,403	4,051	1,007	1,280	4	62	10,564
Union actors, writers and performers	1,438	11,309	11,084	2,224	2,221	12	67	28,355
Other actors, writers and performers	1,058	1,724	8,497	1,193	1,247	136	144	13,999
Talent payroll	3,253	16,436	23,632	4,424	4,748	152	273	52,918
Royalty payments to authors', composers' and musicians' associations	186	592	341	256	120	—	—	1,495
Other production fees and performing rights (special events and news)	445	4,161	5,487	226	116	—	152	10,587
Total	3,884	21,189	29,460	4,906	4,984	152	425	65,000
1979								
Musicians' fees	646	3,478	4,168	1,097	1,159	20	51	10,619
Union actors, writers and performers	1,427	12,245	10,937	2,150	2,017	6	113	28,895
Other actors, writers and performers	1,142	1,353	9,040	1,175	550	62	172	13,494
Talent payroll	3,215	17,076	24,145	4,422	3,726	88	336	53,008
Royalty payments to authors', composers' and musicians' associations	200	653	368	292	136	—	—	1,649
Other production fees and performing rights (special events and news)	233	4,332	6,534	405	1,011	95	182	12,792
Total	3,648	22,061	31,047	5,119	4,873	183	518	67,449

17.15 Percentage of newspaper readers by age group who expressed interest in various sections¹

Newspaper section	15-16	17-19	20-24	25-34	35-44	45-54	55-64	65-69	70 and over	Total
Local and regional news	34	42	53	67	73	76	81	81	65	66
National news	19	25	39	53	62	65	69	71	56	53
International news	17	22	33	47	55	59	66	63	53	48
Editorial	6	10	13	19	29	38	47	47	39	27
Financial	3	6	8	13	17	23	22	19	15	15
Sports	38	35	30	29	32	31	32	35	21	31
Arts and entertainment	42	38	38	34	29	27	29	23	17	31
Comics	56	45	40	30	23	20	23	22	17	30
Feature stories	28	30	34	38	37	35	37	34	27	35
Homemaking	8	12	17	25	27	30	37	32	25	24
Want ads	22	32	31	28	25	26	27	25	17	27
Other advertising	15	17	16	19	19	18	26	22	16	19
Other	24	20	14	15	17	15	18	16	11	16

¹Based on sample survey of 20,000 Canadians, February 1978.

17.16 New recordings manufactured, by Canadian-content value¹ and musical type, 1978

Musical category	Canadian-content recordings		Non-Canadian content recordings	
	7" singles	12" albums	7" singles	12" albums
Adult-oriented popular music	111	115	293	469
Top 40 or rock oriented music	323	159	1,056	1,009
Classical	—	18	—	494
Jazz	1	11	10	215
Country and folk	173	66	211	177
Children's	—	6	63	38
Other	9	15	2	47
Unspecified	80	185	181	317
Total	697	575	1,816	2,766

¹"Canadian-content value" refers to criteria specified by the CRTC. A record must have some combination of any two of the following characteristics: the record was produced in Canada; the lyrics were written by a Canadian; the music was composed by a Canadian; the featured performer is a Canadian.

17.17 Receipts and payments on travel between Canada and other countries, 1972-79 (million dollars)

Country	1972	1973	1974	1975	1976	1977	1978	1979
United States								
Receipts	1,023	1,160	1,328	1,337	1,346	1,525	1,650	1,870
Payments	919	1,073	1,196	1,587	1,956	2,280	2,553	2,451
Balance	104	87	132	-250	-610	-755	-903	-581
Other countries								
Receipts	207	286	366	478	584	500	728	996
Payments	545	669	782	955	1,165	1,386	1,531	1,512
Balance	-338	-383	-416	-477	-581	-886	-803	-516
All countries								
Receipts	1,230	1,446	1,694	1,815	1,930	2,025	2,378	2,866
Payments	1,464	1,742	1,978	2,542	3,121	3,666	4,084	3,963
Balance	-234	-296	-284	-727	-1,191	-1,641	-1,706	-1,097

Sources

17.1 Information Services, Canada Council.

17.2 - 17.6 Education, Science and Culture Division, Social Statistics Field, Statistics Canada.

17.7 Public Services Branch, National Library of Canada.

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17.9 Merchandising and Services Division, Economic Statistics Field, Statistics Canada.

17.10 Annual reports, National Film Board, 1977-78 and 1978-79.

17.11 - 17.12 Merchandising and Services Division, Economic Statistics Field, Statistics Canada.

17.13 Annual report, Department of Communications, 1977-78.

17.14 Annual reports, Canadian Broadcasting Corporation, 1977-78 and 1978-79.

17.15 - 17.16 Education, Science and Culture Division, Social Statistics Field, Statistics Canada.

17.17 International Travel Section, Financial Flows and Multinational Enterprises Division, Economic Statistics Field, Statistics Canada.

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Manufacturing industries

18.1

Shipments of the top 10

18.1.1

Based on Statistics Canada monthly surveys, preliminary estimates for total manufacturing shipments in 1979 for 171 industries in Canada were \$151.7 billion, an increase of nearly 17.6% over 1978. The top 10 industries alone accounted for 43.5% of the total value of manufacturing shipments, an increasingly high concentration of output compared to 37.8% in 1969 for these same industries.

The leading manufacturing industry in Canada in 1979 in terms of shipments was petroleum refining at \$12.3 billion. Prices increased 18% although restrained by government price controls. During the last decade, this industry has increased its share of manufacturing shipments from 4% in 1969 to 8% in 1979 reflecting both the higher petroleum prices and importance of this energy-related industry to the Canadian economy.

Motor vehicles slipped from first place to second, with shipments in 1979 estimated at \$11.0 billion. Exports of passenger cars to the United States decreased 15% to \$3.9 billion while trucks increased 3% to \$2.6 billion. Increased material and manufacturing costs were responsible for price increases averaging 12% while production decreased as a result of weak consumer and export demand and the substitution by consumers of more fuel-efficient foreign imports.

The pulp and paper mills category was next highest with shipments of \$9.4 billion. There has been a continuing strong export demand for newsprint, an important component in this industry (43% in 1979), despite a slowing down of the US economy; 1979 was a profitable year for pulp and paper with prices rising 19% and plants operating at near capacity.

Three industries were in the \$5 billion to \$6 billion range. Slaughtering and meat packing shipped \$6.6 billion. Price increases during the year (16%) were due mainly to beef, although substitutes increased as well. Worldwide shortages have pushed up prices while changes in consumption patterns have increased demand for low-grade beef used in fast-food outlets. Iron and steel mills at \$5.9 billion in shipments showed a modest increase of 7% in production. With a significant increase in exports in recent years due to competitive prices and the devaluation of the dollar, the industry is undergoing a period of expansion in anticipation of even greater demand for steel in the coming decade. Sawmills and planing mills had shipments of \$5.4 billion. Lumber sales to the United States, accounting for more than half the shipments, reflect the importance of foreign demand for housing in this industry. High price increases (18%) were offset by the low value of the dollar abroad.

The seventh to tenth largest industries had shipments under \$5 billion. Output in the motor vehicle parts and accessories industry was \$4.3 billion. Although more than half the shipments were exported, there remains a substantial trade deficit with the US in this industry. Miscellaneous machinery and equipment shipped \$4.2 billion in 1979. A world leader in pulp and paper machinery, this industry also excels at producing custom-made equipment though a trade deficit still exists on standard commodities produced. Dairy products at \$3.9 billion had relatively modest price increases of 9% over the year and a slight increase in production (3%). The tenth largest industry with shipments of \$3.0 billion was metal stamping and pressing. This industry manufactures a wide variety of products from licence plates to tin cans.

Top 10 for 1978. The census of manufactures carried out by Statistics Canada for 1978 ranked the top 10 manufacturing industries by value of shipments as follows: petroleum refining, \$10.2 billion; motor vehicles, \$10.1 billion; pulp and paper mills, \$7.6 billion; slaughtering and meat packing, \$5.5 billion; iron and steel mills, \$5.0 billion; sawmills and planing mills, the same total as motor vehicle parts and accessories at \$4.7 billion;

dairy products tied with miscellaneous machinery and equipment at \$3.4 billion; and smelting and refining, \$2.4 billion.

18.1.2 Statistics on manufacturing

Manufacturing, as one of the most important sectors of the economy, in 1978 accounted for 20.7% of the gross real domestic product, that is, the output of goods and services produced in Canada. Preliminary data for the 1978 census of manufactures show that 31,963 establishments reported manufacturing shipments of \$129.0 billion and nearly 1.8 million employees, about 86,000 more than in 1977.

A monthly survey of employment produced an estimate of 1.9 million employees in manufacturing for 1979. A preliminary estimate of average weekly wages and salaries in this sector for March 1980 amounted to \$335.61. Physical output per man-hour worked increased at an average annual rate of 3.9% over the 1961-79 period.

Exports of fabricated materials and end products, roughly equivalent to manufactured goods, indicate Canadian manufacturers did some processing on 70% of total exports in 1979. Profits (before taxes and extraordinary items) of incorporated companies classified as manufacturing entities amounted to 8.3% of total revenue for the same year. In 1980, according to a survey of investment intentions, it was anticipated that the manufacturing industries would be accounting for 28% of all capital expenditures for new machinery and equipment. Total expenditures in 1979 on research and development in Canadian manufacturing was \$809.2 million representing 33.9% of total expenditures in all sectors.

18.1.3 Capacity utilization

Capacity utilization rates measure the extent to which capital stock resources are used in the production of goods. The gap between the potential and actual use made of capital assets is a reflection of economic activity.

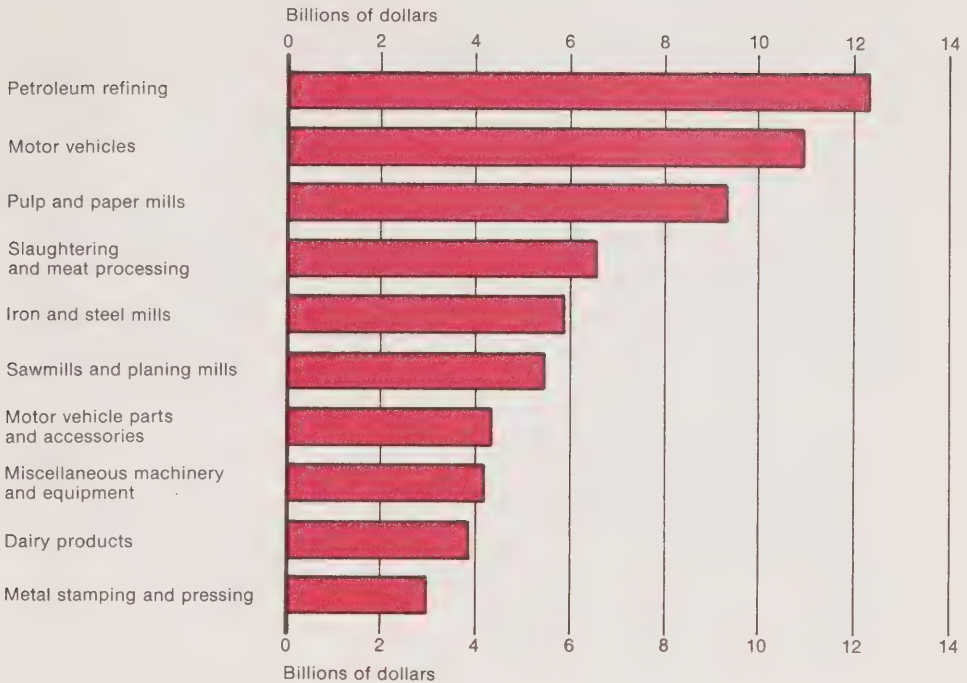
Capacity utilization for all manufacturing industries in the first quarter of 1980 was 84.6%, a decrease of 3% over the same period the previous year. The transportation industries accounted for the largest reduction, down 25 percentage points to 72.8%. Non-durables measured 88.8% for this period, somewhat greater than 80.4% for durables. Non-durable industries have usually had greater capacity utilization rates historically, partly because of the perishable nature of the goods produced which discourages inventory buildup and a constant demand for such products as food and clothing. Demand for durable goods shows a more cyclical behaviour with plants often having excess capacity to meet peak demands.

As Canadian exports have become more attractive abroad with the devaluation of the dollar, and domestic manufacturers have been substituting cheaper Canadian products for imports, the economy has experienced a surge in demand for certain manufactured goods. Four major groups out of 20 were operating at near capacity in the first quarter of 1980: printing and publishing at 98.9%, machinery industries at 97.3%, paper and allied products at 96.9% and knitting mills at 90.6%. Major groups operating in the 85%-89.9% range were tobacco at 89.9%, food and beverages at 89.4%, miscellaneous manufacturing industries at 88.9%, textiles at 88.1%, metal fabricating at 87.8%, rubber and plastics at 87.4% and electrical products at 87.2%.

18.2 Federal assistance to manufacturing

The industry, trade and commerce department (ITC) is responsible for stimulating the establishment, growth and efficiency of the manufacturing, processing and tourist industries in Canada, and also for developing export trade and external trade policies. It assists Canadian industries to initiate and take advantage of technological advances, improve products and services, increase productivity and expand domestic and foreign markets through a variety of programs and services. At each phase of the product cycle — from research, development and design through production and marketing — the department can assist with information and funds.

The department of regional economic expansion (DREE), under the Regional Development Incentives Act, provides grants to business and industry to establish,

Shipments of the 10 leading industries, 1979^P

expand or modernize manufacturing and processing facilities in designated regions. These include all the Atlantic provinces, Manitoba, Saskatchewan, Yukon and Northwest Territories and parts of Ontario, Quebec, Alberta and British Columbia.

Enterprise development

18.2.1

The principal objective of ITC's enterprise development program (EDP) is to encourage growth of manufacturing and processing activity in Canada by providing financing assistance to qualified companies to adjust their operations to changing circumstances, to take advantage of available opportunities, or to assist in industrial innovation. Eligibility is generally limited to small and medium-sized manufacturing or processing firms.

EDP may provide three broad types of assistance: insurance of up to 90% toward term loans by private lenders to manufacturers and processors to restructure their operations or supplement working capital, when normal financing is not available on reasonable terms; grants, normally up to 75% of eligible costs, for an R&D project which would be a burden on the company's resources; and grants normally up to 75% to engage consultants for market feasibility and productivity enhancement studies, product development and design, and pollution technology projects.

In 1980, EDP grants were available to develop proposals for projects eligible for assistance, to partially offset the cost of qualified consultants; to identify need for new products through research of user requirements and related product and market testing; to develop new or improved products, incorporating advances in technology and offering good prospects for profitable commercial exploitation, with rights to the technology vested in the company but the exploitation of the project to be undertaken in

Canada; for product design, normally of durable products that would be mass-produced by industrial processes; and to study productivity improvement measures new to the firm and involving some risk. Loan insurance (guarantees) could be provided through the adjustment assistance components of EDP when usual sources of term financing were inadequate, to facilitate restructuring or rationalization of manufacturing and processing firms in Canada, to encourage secondary manufacturing and processing, and to permit Canadian firms to become more internationally competitive.

Forms of assistance included loan insurance and consulting grants to encourage restructuring in footwear or tanning industry firms, to facilitate mergers and acquisition of manufacturing and processing firms, to develop and demonstrate new pollution control and abatement technologies, and to finance sales of Dash 7 aircraft.

The full range of EDP assistance was available to enable companies to take advantage of export opportunities opened up by multilateral trade negotiations or requiring restructuring in the resulting more competitive environment.

Decisions on proposals are judged by enterprise development boards made up from the private sector and public service, under chairmanship of prominent Canadian executives. Regional enterprise development boards in each province make grants or loans under EDP to a maximum of \$200,000 to companies with annual sales of not more than \$5 million. A central board in Ottawa handles all other cases.

The EDP approach is similar to investing in firms, not just supporting projects, much as merchant banks serve clients by providing (or arranging for) all types of financing, and financial and management services.

In fiscal year 1978-79, enterprise development boards approved 143 adjustment assistance loan guarantees or loans for a total of \$117.3 million and provided \$39.6 million in contributions toward the cost of 284 innovation and product development projects.

18.2.2 Industry energy research and development

An industry energy research and development program (IERD) was introduced in October 1977 to help Canadian industry research and develop processes and equipment that could reduce industrial energy consumption, and to promote development technology. ITC contributes up to 50% of the estimated costs. Projects undertaken included development of new technology in steel soaking pits, use of coal dust waste to replace other fuels, use of waste heat in paper machines to reduce energy consumption, and of paint solvent as fuel in drying ovens.

18.2.3 Small businesses loans

A Small Businesses Loans Act (SBLA) makes loan guarantees available to new and existing small businesses. A small business is defined as an enterprise whose annual gross revenues do not exceed \$1.5 million during a fiscal period. For a new business, it is an enterprise whose estimated gross revenue in the first fiscal period, not less than 52 weeks, does not exceed \$1.5 million.

Loans are made to small business enterprises in manufacturing, wholesale or retail trade, service businesses, construction, transportation and communications. Under the act a small business may have outstanding not more than \$75,000 at any one time.

The rate of interest on SBLA loans is set at 1% over the prime lending rates of the chartered banks and fluctuates with changes in those rates for the duration of the loan. Loan repayment is not to exceed 10 years. Instalments must be paid at least annually or more frequently at the discretion of the lender.

All SBLA loans must be secured. Security taken can be in the form of land or chattel mortgages or other security that the lender deems to be required. A borrower is also required to sign a promissory note. Other terms and conditions are worked out between the lender and the borrower.

18.2.4 Small business intern program

This program was intended to create permanent job opportunities for recent graduates and to enhance the growth potential and competitive position of small and medium-sized businesses. Firms were encouraged to hire recent graduates who could thus

acquire practical experience in the small business environment. The program increased contact and interchange between the small business community and institutions of higher learning.

The federal government paid 50% of an intern's wages up to \$675 a month, for a period not over 12 months. This contribution could not be made for a position already filled at the time of application, nor intended to create part-time or summer employment. Payments under this program beyond March 31, 1980 were subject to availability of federal funds.

Automotive program

18.2.5

A Canada–United States agreement on automotive products, in effect since January 1965, provided for the removal of tariffs and other impediments to trade between the two countries in motor vehicles and original equipment parts. Basic objectives were creation of a broader market to permit benefits of specialization and scale, trade liberalization to enable both countries to participate in the North American market on an equitable basis, and development of conditions in which market forces would operate to attain economic patterns of investment, production and trade.

Machinery program

18.2.6

This program is an industrial development incentive with a twofold objective. It encourages machinery manufacturers to derive optimum benefit from the tariff on machinery and enables machinery users to acquire advanced production equipment at the lowest possible cost.

The program assists Canadian machinery manufacturers by ensuring tariff protection on the machinery and equipment they produce as soon as they are able to supply. Lower production costs result from remission of duty on production components not obtainable in Canada on an economic basis. Direct contacts between machinery producers and users encourage the purchase of Canadian-made machinery instead of imported equipment.

Industrial design

18.2.7

Design Canada, the administrative arm of the National Design Council and the branch of the department responsible for design in industry, manages a number of programs aimed at improving the products of Canadian secondary industry. Design Canada activities include co-funded programs of design assistance to industry, a design advisory service, scholarships, design education advisory service and materials, product design case studies, audio-visual presentations and exhibits, awards for design in industry, and design management seminars for selected industry sectors.

Defence industry productivity

18.2.8

This program is designed to enhance the technological capabilities of the Canadian defence industry to enable it to compete in defence related sales in Canada and abroad. Financial assistance is provided to industrial firms for selected projects. Emphasis is placed on defence technology having civil export sales potential. Assistance may cover development of products for export purposes, acquisition of modern machine tools and other manufacturing equipment to meet exacting military standards, and assistance with pre-production expenses to establish manufacturing sources in Canada for export markets. Manufacturing equipment projects to be assisted are selected on the basis that the machinery acquired will greatly increase productivity.

Shipbuilding industry assistance

18.2.9

A shipbuilding industry assistance program provides assistance to shipyards building or converting ships for domestic or export customers. Assistance is in two forms. An outright subsidy was introduced initially at 14% but revised to 20% of the approved cost of the eligible ship. An improvement grant of 3% is conditional upon the shipyard investing this and a matching amount for improved performance. The program encourages the use of Canadian materials, components and equipment when they are available at competitive prices.

18.2.10 Export market development

The objectives of the program for export market development (PEMD) are to develop and increase exports of Canadian goods and services by sharing with the business community the financial risks of entering new foreign markets. Such risks may result from the unusual size and complexity of a large specific project venture, international competition, new and unfamiliar market conditions or the need for a consortium approach to meet opportunities abroad. The program is divided into five sections to meet different direct export marketing needs.

It encourages participation in capital projects abroad, including facilities, systems and other projects requiring the provision of skilled services, engineering products and other capital goods. It identifies markets, particularly for manufactured goods outside Canada and continental US. It encourages participation in trade fairs abroad, and visits by incoming foreign buyers; such buyers from anywhere outside Canada and the continental US may be invited by a company to examine products and production in Canada or in an agreed third location.

The department's contribution will normally be up to 50% of transportation and special and unusual costs, and \$90 a day toward personnel costs. If a company receiving assistance succeeds in obtaining the business sought, repayment of the department's contribution is required, but no repayment is required if the company is unsuccessful.

18.2.11 Promotional projects

A program of trade fairs and missions was set up to promote the export of Canadian products and services. Its sponsored promotions are designed to meet particular requirements and include trade fairs abroad, trade missions, in-store promotions, travelling sample shows, incoming trade delegates and buyers programs, export-oriented training programs and, under the programs for export market development, incentives for participation in trade fairs abroad and incentives for foreign buyers.

18.2.12 Fashion design assistance program

Fashion/Canada, a non-profit corporation, administers this program. The board of directors is comprised of representatives from federal and provincial governments, trade and industry associations, retail, media, education and manufacturing sectors. The program includes a designer development project directed toward the training of designers and increasing designer acceptance into the industry work force. Design and designer promotional projects are undertaken to increase at home and abroad the recognition and identification of good Canadian design talent and capability.

18.3 Canada Development Corporation

The corporation (CDC) was established to develop and maintain Canadian-controlled corporations in the private sector, to give Canadians greater opportunities to invest in the economic development of Canada. Industries considered have potential for long-range development, for upgrading Canadian resources and Canadian expansion in international markets and have a high technological base.

Polysar Ltd. is CDC's wholly owned operating company in petrochemicals. CDC and Polysar together own 60% of Petrosar Ltd. which operates the first world-scale crude oil topping and naphtha cracking unit in Canada. CDC's interest in the mining industry is represented by 34% ownership of Texasgulf, Inc., one of Canada's largest mineral producers.

CDC Oil & Gas Ltd., 100% owned, is CDC's operating company in oil and gas exploration and production. Through CDC Life Sciences Inc., also 100% owned, CDC is developing a Canadian presence in the health care and pharmaceutical field. CDC owns 64% of AES Data Ltd. of Montreal, a leading manufacturer of video-display word-processing equipment. CDC's interest in five associated venture and expansion capital companies has been grouped into one holding and managing enterprise, CDC Ventures Inc., which represents the largest pool of venture and expansion capital in Canada. Companies in that group have themselves invested in more than 30 small and medium-sized businesses.

As at December 1, 1979, CDC's consolidated assets amounted to \$2,768 million and shareholders equity was \$825 million.

Federal protection and standards

18.4

Patents and trade marks

18.4.1

Branches of the corporate affairs bureau administer the legislation affecting patents and trade marks, in the federal consumer and corporate affairs department.

Patents. Patents for inventions are issued under the provisions of the Patent Act (RSC 1970, c.P-4; 1970-72 c.1) and patent regulations have been proclaimed to carry into effect the objectives of the act. Applications for patents for inventions and requests for information about such patents should be addressed to the Commissioner of Patents, Ottawa, K1A 0E1.

By March 31, 1979, the patent office had issued 1,051,151 patents which are classified for searching into 340 main classes and 34,594 subclasses of subject matter. About 21,000 new patents are granted each year.

A public search room and library are maintained where the public may obtain information about Canadian and foreign patents. Paper copies of Canadian patents issued from January 1, 1948 are available at \$2 each plus postage. Microfiche copies cost \$1. The official journal of patents, the weekly *Patent Office Record*, lists patents issued during the week covered, and other information about services provided.

Many foreign patents are kept in the patent office library for public use. British patents and their abridged specifications from 1617 to date and United States patents from 1845 to date are available, as well as many patents, indexes, journals and reports from Australia, Austria, Belgium, Colombia, Czechoslovakia, Egypt, France, Federal Republic of Germany, India, Ireland, Italy, Japan, Mexico, the Netherlands, New Zealand, Norway, Pakistan, South Africa, Sweden, Switzerland and Yugoslavia.

Trade marks. The trade marks office, a branch of the corporate affairs bureau, administers the Trade Marks Act (RSC 1970, c.T-10) which covers all legislation on registration and use of trade marks and supersedes from July 1, 1954 former legislation enacted under the Unfair Competition Act, the Union Label Act and the Shop Cards Registration Act. Correspondence relating to an application for registration of a trade mark should be addressed to the Registrar of Trade Marks, Ottawa.

Applications are advertised in the *Trade Marks Journal*, a weekly publication that also gives particulars of every registration of a trade mark. The required fee payable on application for registration of a trade mark is \$100.

Industrial design and timber marks

18.4.2

The Industrial Design Act provides up to 10 years protection for the shape, pattern, ornamentation or configuration of articles of manufacture, provided such new design is registered within one year of publication in Canada. Protection is granted if an examination does not reveal that any other design already registered or published is identical with or closely resembling the proposed design. The name of the proprietor, the letters Rd. (Registered) and the year of registration must appear upon the article to which the design applies.

Individuals or companies floating timber on the inland waters of Ontario, Quebec and New Brunswick must, under the Timber Marking Act, select a mark or marks for the timber and apply for the registration of such marks within one month of engaging in this business.

Standards Council of Canada

18.4.3

This council, with headquarters in Ottawa, is the national co-ordinating agency through which organizations concerned with voluntary standardization may co-operate in recognizing, establishing and improving standards in Canada through a national standards system. Sponsored by the council, the system includes organizations involved in standards-writing, testing and certification.

The objects of the council are to foster and promote voluntary standardization relating to the construction, manufacture, production, quality performance and safety of buildings, structures, manufactured articles and products and other goods.

In the international field, the council appoints members and directs activities of the Canadian national committee of the International Electro-Technical Commission and is the member body for Canada in the International Organization for Standardization. The council co-ordinates and integrates the national and international standards and oversees the accreditation of some 350 delegates to represent Canada at over 360 international technical committee meetings each year. The council's international standardization branch is at Mississauga, Ont.

18.4.4 Trade standards and regulations

In its consumer program, the consumer and corporate affairs department is responsible for administration of broad legislation affecting the marketplace. Policies and programming are determined by the consumer affairs bureau of the consumer and corporate affairs department.

Hazardous products. The product safety branch administers the Hazardous Products Act which deals with consumer goods. The act makes specific mention of products designed for household, garden, or personal use, for use in sports or recreational activities or for use by children. It also mentions without reference to end use, poisonous, toxic, flammable, explosive and corrosive products. The minister is empowered to establish mandatory standards for application in Canada. Compliance orders being enforced include the use of shatterproof glass in patio and shower doors, flammability standards for children's sleepwear and protective standards for hockey helmets. Regulations governing toys, rattles, cribs and portable car seats are designed to protect children. Other rigid specifications cover such products as matches, charcoal and ceramics.

General commodity field. The Consumer Packaging and Labelling Act and regulations administered by the consumer fraud protection branch are designed to give uniformity to packaging and labelling practices in Canada, reduce the possibilities of fraud and deception in packaging, and control the proliferation of package sizes. The legislation applies to most pre-packaged consumer products and came into effect in September 1975 for non-food items and in March 1976 for foods.

Regulations under the Textile Labelling Act, in effect since December 1972, require labels on all consumer textile articles. The label must include fibre names and percentages and the identification of the dealer. The regulations also deal with misrepresentation in both labelling and advertising. The textile care labelling system of coloured symbols recommending proper care for textile products is a voluntary program. The Canada standard size system for children's garments, developed by the Canadian Government Specifications Board in conjunction with the consumer and corporate affairs department, is administered under the National Trade Mark and True Labelling Act. This system is also voluntary, although dealers must register for a licence before claiming that the garment does, in fact, conform to the standard size and before attaching such a label to the product.

Control of marking of precious metal articles is maintained under the Precious Metals Marking Act. The regulations came into force in July 1973.

18.5 Provincial assistance to manufacturing

18.5.1 Newfoundland

The Newfoundland industrial development department assists prospective industry to determine desirable plant locations, prepare feasibility studies, and define raw materials, transportation and labour costs and other economic data.

Financial assistance may be provided by the Newfoundland and Labrador Development Corp. through loans against securities offered by the prospective enterprise, or by holding shares or other securities of any company in the province, with

the right of the enterprise to buy back these shares. The corporation also provides management advice.

The government may provide direct financial help based on cost-benefit analyses. Buildings and land may be provided on attractive terms. Industrial training facilities are available for specialized courses to meet requirements of incoming industry.

Prince Edward Island

18.5.2

Industrial Enterprises Inc. (IEI), an autonomous Crown corporation with an independent board of directors composed of businessmen, provides money for new and existing manufacturing and processing industries. It identifies specific industrial opportunities, establishes their feasibility and provides management assistance in industrial engineering, marketing and finance.

The corporation makes loan capital available. It constructs and rents serviced factory buildings and provides equipment leasing. It maintains industrial property and operates industrial parks at Charlottetown and Summerside, offering serviced lots for sale to manufacturers and processors for warehouses and essential service businesses. Long-term financing is provided at attractive rates of interest.

IEI establishes contact with venture capital groups in Canada and other countries which show an interest in provincial projects. Its consulting group provides management assistance to PEI companies.

Nova Scotia

18.5.3

Industrial Estates Ltd. (IEL) is a Nova Scotia Crown corporation created to assist the establishment and expansion of manufacturing industries. IEL can finance, at competitive interest rates, up to 100% of the cost of land and buildings and up to 60% of the installed cost of production machinery of a new enterprise or a plant expansion. Financing land and buildings over a 20-year period and machinery over 10 years is customary. IEL can also design an incentives program to suit the needs of a project after evaluating the project's economic impact on Nova Scotia and Canada. IEL owns and operates the provincial industrial parks in Nova Scotia.

The Nova Scotia research foundation conducts research into ocean technology, chemistry, biology and geophysics and offers advisory, technical and scientific services to industry and government.

The Nova Scotia resources development board, affiliated with the Nova Scotia department of development, provides term financing on the security of fixed assets for projects defined under the Industrial Loan Act, the Industrial Development Act and the Fishermen's Loan Act. Such projects include tourism facilities, primary agriculture processing, fish plants, vessels and saw and planing mills.

The NS department of development has other programs to help business and industry. A management development program subsidizes the salaries of NS graduates with MBA degrees who are hired by NS businesses. A marketing assistance program offers grants to assist NS firms to attend trade fairs and exhibits, conduct market investigations, attend market education courses, and host incoming buyers. A product design and development program provides grants to NS manufacturers. A rural industry program offers capital grants to NS businesses to establish, expand or modernize their facilities outside the Halifax-Dartmouth city limits. An opportunity identification program assists NS businesses to identify products likely to be commercially successful. An industrial malls program encourages the development of new, small businesses and industries by providing rental assistance in their first years as well as advisory and some office services.

Municipal tax assistance is available for limited periods for new or expanding firms, on approval by the NS departments of municipal affairs and development.

The province co-operates closely with the Cape Breton Development Corp., a federal Crown corporation, and contributes financially to some of its sponsored industry-development projects.

18.5.4 New Brunswick

The commerce and development department is responsible for developing manufacturing and processing in the provincial economy. Its aims are to support and strengthen existing industries, attract new industry, increase the quality of employment, expand the tax base, maintain or improve social or environmental quality and alleviate regional disparities.

An investment management branch makes recommendations on applications for financial assistance to industries wishing to locate in the province and to industries planning to expand. An industrial development branch is responsible for attracting new industries to New Brunswick. A regional development division is responsible for liaison on federal-provincial development agreements, capital expenditures in provincial industrial parks agreements, capital expenditures in provincial industrial parks and with regional industrial development commissions. A commerce and industry services branch provides management, technical and product improvement services to industry; develops markets for manufactured or processed products; develops local processing of resources; and provides management, technical and financial services to industries in danger of failure. A planning branch evaluates cost-effectiveness of departmental programs and develops and modifies programs.

Three agencies associated with the department report to the commerce and development minister. The New Brunswick industrial development board recommends financial assistance to manufacturers or processors, normally through a direct loan or loan guarantee. Terms and conditions are subject to individual negotiation but specifically require the applicant to provide reasonable equity and security. Provincial Holdings Ltd., a Crown corporation, administers the province's equity position in various companies. This agency is prepared to take an equity position in manufacturing industries wishing to locate in New Brunswick. The research and productivity council (RPC) provides technical support services for New Brunswick industry. RPC carries out research and problem-solving on a cost-recovery basis for clients in Canada and abroad. An industrial engineering service and free technical information are made available to NB (and PEI) companies by RPC in co-operation with the National Research Council.

18.5.5 Quebec

Quebec assistance to manufacturers is provided mainly through the Industrial Development Corp. The corporation's aims are to help transform Quebec's industrial structure through aid to high-technology industries, and to encourage existing industries to consolidate production facilities while adapting to modern techniques to improve their competitive position. Companies unable to obtain financial assistance at reasonable rates elsewhere may obtain aid if their operation contributes to the economic development of the province or any of its regions. Corporation assistance may also be granted to small manufacturing firms toward capital investment to build, buy, renovate or expand plants, buy land, machinery, tools or equipment and facilities, purchase or develop patents, improve the financial organization of the company or purchase shares in manufacturing or commercial firms. Assistance may take various forms: loans at market interest rates; assumption of part of the costs of loans; repayment of part of the loans provided the company meets certain criteria; and purchase of part of a company's capital stock, provided the corporation at no time holds a majority of the capital stock or holds shares which bring its total investment in shares in such companies to more than 30% of its total assets.

The corporation also developed a program for companies exporting goods manufactured in Quebec by providing financing, loan underwriting, interest allowances on short-term credit, and funds for establishing foreign branches.

Three programs of the industry and commerce department come under the Act respecting Fiscal Incentives to Industrial Development (Bill 48). An industrial incentives fund enables small and medium-sized companies to plan expansion, and encourages reinvestment of their profits. This continuing program enables companies with 200 or fewer employees, assets of less than \$7.5 million and at least 50% of their

gross revenue derived from production to deposit in the fund 50% of the provincial taxes otherwise payable. All sums deposited in the fund must be used within five and a half years following the taxation year to make an allowable expenditure related to manufacturing or processing operations, up to a maximum of 25%.

One program provides manufacturing firms with a tax abatement to encourage regional economic development. It provides an abatement up to 50% of tax otherwise payable, to a maximum of 25% of an allowable investment related to the operation of a manufacturing firm or \$500,000 for the aggregate of the allowable investments. This applies to any corporation operating such a firm and making an investment of at least \$50,000 prior to March 31, 1980, subject to certain economic and regional criteria.

Another program promotes expansion of small and medium-sized manufacturing companies. It provides financial assistance to firms employing 500 people or less and having high growth potential.

An exemption applies to provincial sales tax on gas and electricity used directly for manufacturing or processing. A manufacturing firm may also receive total repayment of the tax paid on gasoline or diesel fuel if the fuel is used to operate machinery or as a raw material in the manufacture of certain products. Industrial machinery used in Quebec for manufacturing or processing is exempt from provincial sales tax.

For years the government of Quebec has sought easier access to foreign markets for Quebec businesses. The industry and commerce department has economic advisers attached to its delegations and Quebec offices abroad, provides financial and technical assistance to firms wishing to participate in industrial fairs, organizes trade missions and provides information on export techniques and the various aspects of external trade. The Industrial Development Corp. also grants financial assistance to manufacturing and commercial firms exporting goods manufactured in Quebec.

In 1977 the Quebec National Assembly authorized the creation of Quebec business development corporations. The aim is to provide risk capital for small and medium-sized manufacturing firms, as well as management assistance. Shareholders are entitled to tax abatements of up to 25% of the total investments, to a maximum of \$25 per share.

A Quebec food crop programs corporation was set up to encourage and participate in the establishment, modernization, expansion, development, consolidation and grouping of food industries. It has two main methods of operation: participation as a co-partner in a business by purchasing risk capital, without at any time holding the majority of the capital stock, and selling its shares when the co-partners decide to repurchase them; and long-term loans at market interest rates (loans to shareholders). Its operations are restricted to processing and marketing sectors.

The industry and commerce department offers companies technical assistance, mainly in consultation services, negotiation of licence agreements, market studies and statistics. An industrial research centre provides information and technical assistance.

Ontario

18.5.6

Ontario northern and eastern development corporations are Crown agencies providing services to business to stimulate industrial growth, economic development and employment. They report to the Ontario legislature through the industry and tourism minister. Their boards of directors represent the business and financial communities and organized labour.

Loan programs administered by the development corporations include an Ontario business incentive program to encourage industrial and economic development. Incentive loans are repayable, although initial repayment may be deferred. The loans may be interest free or at a rate lower than the Ontario Development Corp.'s prevailing rate of interest.

Term loan programs available to Canadian-owned companies in the province include small business loans for companies to expand their operations in manufacturing or services closely allied to manufacturing, venture capital loans to introduce new technology, loans for approved pollution control equipment; loans for tourist resort operators, export support loans, and industrial mortgages and leasebacks to help establish or expand manufacturing facilities.

The Ontario Development Corp. administers industrial parks in Cobourg and Centralia, renting industrial space and housing. It also manages the sale and leasing of property in Sheridan Park to companies engaged in industrial research and development.

The ministry of industry and tourism provides information on location and expansion of tourist operations, economic studies and other pertinent material; it advises tourist and service industry operators. Industry and trade branches assist manufacturing companies and supporting service industries to maximize use of facilities, apply technology, establish new production facilities and expand domestic and international markets. A manufacturing opportunity days program presents new products and processes, licensing opportunities, joint ventures, and contracts for tendering.

Throughout the province 15 field offices meet local needs and problems. Seven international field offices to cover other countries are in Chicago, Los Angeles, New York, Paris, Frankfurt, London and Tokyo. To aid the manufacturer, the international staff works with industrial development officers in Toronto to arrange trade missions, business appointments, plant visits, incoming buyer missions, tourist incentive

Ontario is Canada's leading manufacturing province and in 1979 accounted for more than half the estimated \$151.7 billion in value of Canadian manufacturers' shipments of their own products.

programs, and to provide consulting services with government and investment representatives. Visits to international trade fairs and exhibitions enable executives from Ontario companies to see new products and manufacturing techniques. This program introduces Ontario companies to foreign concerns wishing to establish contacts for licensing, joint ventures or expansion in Canada.

18.5.7 Manitoba

The Manitoba department of economic development and tourism, in consultation with a variety of broadly based advisory boards and committees, implemented government programs and services through six primary line functions: business development, market development, small enterprise development, program development and technical services, administrative and internal services, and Travel Manitoba.

Assistance is offered to the private sector in all aspects of establishing or expanding manufacturing facilities in the province including: identification of new manufacturing opportunities, engineering and technical advice; new product design and development; human resources planning; economic and market research; manufacturing and licence agreements; and development of export markets.

Delivery of these programs and services has been enhanced under Enterprise Manitoba, a \$44 million federal-provincial shared-cost agreement, with the opening of enterprise development centres in Winnipeg and Brandon, an industrial technology centre in Winnipeg and the Canadian Food Products Development Centre in Portage la Prairie.

18.5.8 Saskatchewan

Goals of the Saskatchewan economic development policy, implemented mainly through the industry and commerce department, are: to diversify the economic base, add value to provincial resources by processing them in the province where feasible, and support the private sector to make it easier for investors to anchor new and viable industries in the province.

A small business interest abatement program was introduced in April 1978 to reduce the interest burden for small businesses on money borrowed to expand or to

establish new businesses. A product development program assists manufacturers to develop new products or improve goods already in production.

Industries can receive help through a management development program which offers grants up to 50% of management consultant fees and provides financial help to industrial managers to attend approved courses. The department also organizes and finances management seminars and assigns industrial consultants to advise potential investors. A Saskatchewan mainstreet development program supplies consultant services and grants to help with storefront renovations in central business districts of small communities. General counselling to business people is provided through nine regional offices and two urban offices. During 1978, about 3,300 inquiries were handled and more than 1,100 businesses received assistance.

An employment opportunities program for disadvantaged persons and a special ARDA program under the Agricultural and Rural Development Act help to create employment for people of Indian ancestry. They provided 184 jobs in 60 projects in 1978.

An aid to trade program is designed to help individual manufacturers or producers to introduce new products to the marketplace or to cultivate new markets for existing products. This program provides cost sharing for a variety of activities including trade fairs, trade missions, market research, product promotion, a program for incoming buyers and sample shipments.

The Saskatchewan Economic Development Corp. (SEDCO), a Crown corporation, shares costs with communities developing industrial parks and providing infrastructure for new industrial development. SEDCO financing includes mortgage loans of up to 20 years, short-term loans; leaseback or rental arrangements on industrial sites, buildings and equipment; share capital participation and financing; and guarantees on loans with conventional lending sources. SEDCO is a major source of venture capital and can develop an individual financial package for each project proposal.

Financing is also available through a small industry development program administered by the Saskatchewan industry and commerce department. Forgivable loans are offered for projects costing less than \$100,000. Manufacturing and processing companies planning to expand, modernize or establish a new facility in the province are eligible to receive loans.

Operation Recycle removes discarded vehicles from the Saskatchewan countryside and salvages the metal they contain, transporting it to the Interprovincial Steel and Pipe Co. in Regina for reprocessing.

A Saskatchewan handcraft festival, sponsored by the department, is held each year in the town of Battleford. In 1978 records were set in both attendance and sales. An estimated 15,000 people bought or placed orders for \$84,000 worth of products.

Alberta

18.5.9

The Alberta Opportunity Co. (AOC), a Crown agency, promotes economic growth by stimulating new businesses and aiding existing enterprises. AOC gives priority to Albertans and Alberta-owned enterprises, small businesses and centres of small population.

To qualify for assistance, a business may be a proprietorship, partnership, co-operative or corporate body, must operate for gain or profit, must be in Alberta and must provide assurance that any aid given will be used exclusively in Alberta. Eligible businesses include manufacturing, processing and assembly operations, service industries, commercial wholesale and retail trade, recreational facilities, tourist establishments, local development organizations, student business enterprises and new industries which are unique and valuable additions to the province. The program is not designed for finance companies, suppliers of residential accommodation other than tourist facilities, public utilities including power generation and distribution, or resource-based industries such as mining and oil and gas production.

Assistance may provide for establishing new businesses, acquiring fixed assets — land, buildings and equipment — expanding existing facilities, strengthening working

capital, financing raw material or finished inventories for manufacturers, and research and development. Funds are made available directly or by guarantee in various forms.

Business counselling services of AOC include management advice and guidance on financial, technical and marketing matters for small and intermediate-sized Alberta businesses which cannot afford to obtain this type of help elsewhere. Services are provided through the company's head office in Ponoka and branch offices in Calgary, Lethbridge, Grande Prairie, St. Paul, Medicine Hat, Edson and Edmonton.

18.5.10 British Columbia

The ministry of economic development has programs, services and expertise for industry, the business community and government agencies. Goals of British Columbia's economic strategy are growth of employment and real income, improved efficiency, price stability and balanced regional economic development.

An economic analysis branch carries out research and long-term economic assessment, planning and forecasting. This complements the ministry's statistical and financial analysis and the policy planning and budgetary functions of the ministry of finance. A program implementation and co-ordination branch negotiates intergovernmental and government-industry programs, and provides their financial management. A business and industrial development branch promotes growth and diversity in the business community. It helps manufacturers develop, finds new export markets for BC goods and services and encourages new investment by BC companies and firms elsewhere in Canada and abroad. It sponsors trade missions and trade shows.

The ministry maintains liaison with the British Columbia Development Corp. to provide for acquisition and development of serviced industrial land in areas where it was not previously available, or where high land costs prohibited location of individual firms. It provides loans to businesses to expand existing operations or create new ones. The ministry maintains a trade office and economic adviser at British Columbia House in London, England.

Sources

- 18.1 Manufacturing and Primary Industries Division, Economic Statistics Field, Statistics Canada.
- 18.2 Public Information Branch, Department of Industry, Trade and Commerce.
- 18.3 Canada Development Corp.
- 18.4 - 18.4.2 Communications Services, Department of Consumer and Corporate Affairs.
- 18.4.3 Education and Information, Standards Council of Canada.
- 18.4.4 Communications Services, Department of Consumer and Corporate Affairs.
- 18.5 Supplied by the respective provincial government departments.

Tables

—	not available	e	estimate
—	not appropriate or not applicable	p	preliminary
—	nil or zero	r	revised
--	too small to be expressed	certain tables may not add due to rounding	

18.1 Value of shipments of goods of own manufacture, by province, 1961 and 1976-79 (million dollars)

Province or territory	1961	1976	1977	1978	1979P
Newfoundland	135.9	599.1	697.5	841.0	1,031.6
Prince Edward Island	30.6	116.2	130.4	171.5	..
Nova Scotia	381.4	1,987.5	2,201.5	2,719.9	3,216.9
New Brunswick	390.6	1,864.3	2,040.5	2,434.8	2,859.1
Quebec	7,022.2	25,802.9	28,009.0	33,272.8	39,152.4
Ontario	11,563.7	49,851.3	55,590.9	65,111.9	75,941.9
Manitoba	716.7	2,766.1	2,840.9	3,277.9	3,866.9
Saskatchewan	331.9	1,213.4	1,299.5	1,513.8	1,859.6
Alberta	935.5	5,208.2	6,026.3	7,429.3	8,995.1
British Columbia	1,927.0	8,857.5	10,058.5	12,225.8	14,580.3
Yukon and Northwest Territories	3.4	14.5	15.3	20.6	..
Canada	23,439.0	98,280.8	108,886.1	129,019.2	151,728.5 ¹

¹Includes Prince Edward Island, Yukon and Northwest Territories.

18.2 Value of shipments of goods of own manufacture, by industry group, 1976-79 (million dollars)

Industry group	1976	1977	1978	1979P
Food and beverage industries	17,291.8	18,901.6	21,955.7	25,438.9
Tobacco products industries	886.3	945.6	996.4	1,083.2
Rubber and plastics products industries	2,313.8	2,532.4	3,059.9	3,702.5
Leather industries	696.2	688.8	849.0	1,044.7
Textile industries	2,700.8	2,955.4	3,403.4	4,004.6
Knitting mills	631.2	637.9	711.8	821.8
Clothing industries	2,570.3	2,662.4	3,114.9	3,523.2
Wood industries	4,998.7	5,952.5	7,476.6	8,474.3
Furniture and fixture industries	1,467.7	1,456.5	1,703.8	1,947.5
Paper and allied industries	8,228.7	8,937.7	10,197.3	12,433.6
Printing, publishing and allied industries	3,240.3	3,512.9	4,089.7	4,648.0
Primary metal industries	7,029.0	8,201.5	10,119.5	11,894.9
Metal fabricating industries (except machinery and transportation equipment industries)	6,812.9	7,236.0	8,464.9	10,343.3
Machinery industries (except electrical machinery)	3,885.0	4,159.8	5,037.5	6,421.2
Transportation equipment industries	13,200.9	15,064.8	18,022.9	19,921.4
Electrical products industries	4,733.1	4,860.0	5,435.3	6,695.6
Non-metallic mineral products industries	2,841.3	2,990.9	3,602.7	4,013.5
Petroleum and coal products industries	6,922.8	8,532.7	10,449.4	12,641.4
Chemical and chemical products industries	5,704.2	6,431.5	7,591.8	9,205.3
Miscellaneous manufacturing industries	2,125.8	2,225.3	2,736.8	3,469.7
All manufacturing industries	98,280.8	108,886.1	129,019.2	151,728.5

18.3 Net profit before taxes and extraordinary items, as a percentage of total revenue of corporations, 1976-78

Industry group	1976 ¹	1977	1978
Food and beverage industries	4.3	4.8	4.7
Rubber industries	3.0	2.7	3.5
Textile industries ¹	3.1	5.0	4.6
Wood industries ²	5.3	6.2	9.4
Paper and allied industries	6.4	6.4	9.2
Printing, publishing and allied industries	9.6	8.4	9.8
Primary metal industries	4.9	7.8	10.9
Metal fabricating industries	7.5	5.8	6.8
Machinery industries	7.0	5.0	5.5
Transportation equipment industries	4.8	4.2	3.8
Electrical products industries	5.4	4.0	3.8
Non-metallic mineral products industries	8.3	8.2	8.1
Petroleum and coal products industries	11.0	11.2	10.5
Chemical and chemical products industries	8.4	8.1	7.4
Miscellaneous manufacturing industries ³	7.0	7.3	7.1
All manufacturing industries	6.2	6.2	6.8

¹Includes knitting mills and clothing industries.

²Includes furniture and fixture industries.

³Includes tobacco and leather industries.

18.4 Summary statistics, annual census of manufactures, 1966-78

Year	Estab-lish-ments No.	Activity						
		Manufacturing activity						
		Production and related workers			Cost of fuel and electrici- ty ¹ \$ '000	Cost of materials and supplies used \$ '000	Value of shipments of goods of own manu- facture \$ '000	Value added \$ '000
		Number	Man- hours paid '000	Wages \$ '000				
1966	33,377	1,172,943	2,498,012	5,575,206	731,726	20,642,695	37,303,455	16,351,740
1967	33,267	1,168,651	2,478,916	5,869,085	759,780	21,371,785	38,955,389	17,005,696
1968	32,643	1,160,226	2,458,791	6,278,429	808,764	23,090,970	42,061,555	18,322,204
1969	32,669	1,189,887	2,515,183	6,921,525	860,525	25,383,484	45,930,438	20,133,593
1970	31,928	1,167,063	2,450,058	7,232,256	903,264	25,699,999	46,380,935	20,047,801
1971	31,908	1,167,810	2,448,419	7,819,050	1,000,243	27,661,379	50,275,917	21,737,514
1972	31,553	1,213,106	2,547,609	8,763,104	1,078,916	31,137,946	56,190,740 ^r	24,264,829 ^r
1973	31,145	1,275,985	2,665,681	10,060,062	1,221,885	37,600,538	66,674,393	28,716,119
1974	31,535	1,300,792	2,713,436	11,637,073	1,623,617	47,499,791	82,455,109	35,084,752
1975	30,100	1,272,051	2,613,549	12,672,237	1,805,666	51,177,157	88,460,358	36,139,301
1976	29,053	1,277,352	2,650,237	14,602,171	2,325,265	56,982,416	98,280,777	39,921,919
1977	27,716	1,242,103	2,577,428	15,814,667	2,790,351	63,015,412	108,881,959	44,104,548
1978	31,963	1,310,524	2,721,381	17,933,370	3,397,240	74,894,056	129,019,220	51,679,262
		Total activity		Total employees ²		Cost of materials and supplies used and goods purchased for resale ³ \$ '000	Value of shipments and other revenue ⁴ \$ '000	Value added ⁵ \$ '000
		Working owners and partners		Number	Salaries and wages \$ '000			
		Number	With- drawals \$ '000					
1966	33,377	13,894	60,076	1,646,024	8,695,890	24,195,610	41,722,527	17,260,256
1967	33,267	13,377	59,187	1,652,827	9,254,190	25,546,764	44,143,808	18,049,639
1968	32,643	12,084	58,798	1,642,352	9,905,504	27,546,942	47,646,657	19,483,614
1969	32,669	11,583	59,128	1,675,332	10,848,341	30,347,637	52,130,615	21,456,276
1970	31,928	10,760	58,605	1,637,001	11,363,712	30,805,904	52,886,022	21,417,748
1971	31,908	10,286	60,939	1,628,404	12,129,897	33,462,590	57,479,421	23,187,881
1972	31,553	9,793	62,330	1,676,130	13,414,609	37,663,105	64,360,301 ^r	25,981,742 ^r
1973	31,145	8,981	..	1,751,066	15,220,033	45,697,053	76,689,795	30,766,506
1974	31,535	7,075	..	1,785,977	17,556,982	57,794,605	95,030,218	37,654,465
1975	30,100	6,977	..	1,741,545	19,160,724	62,381,833	102,178,371	38,715,600
1976	29,053	5,677	..	1,743,050	21,799,734	69,487,283	113,416,997	42,553,272
1977	27,716	4,859	..	1,704,583	23,595,238	77,761,372	126,324,545	46,801,174
1978	31,963	6,027	..	1,790,849	26,577,136	91,840,353	148,920,865	54,634,611

¹Cannot be reported separately for manufacturing and non-manufacturing activities but related substantially to manufacturing activity.²Includes production and related workers, administrative and office employees, sales, distribution and other employees; excludes working owners and partners.³Includes supplies used in both manufacturing and non-manufacturing activity.⁴Includes shipments of goods of own manufacture, value of shipments of goods purchased for resale and other operational revenue.⁵Value of total operational revenue less total cost of materials, supplies, fuel and electricity used and goods purchased for resale in the same condition; all adjusted for inventory changes where required.

18.5 Establishments in the manufacturing industries, by number employed and by province, 1976-78

Year and province or territory	Number employed								Total
	Under 5	5 to 9	10 to 19	20 to 49	50 to 99	100 to 199	200 to 499	500 to 999	
	5	9	19	49	99	199	499	999	
1976									
Newfoundland	78	34	36	39	28	—	—	34	249
Prince Edward Island	38	20	22	15	7	—	—	—	106
Nova Scotia	177	99	133	115	60	27	28	5	649
New Brunswick	125	94	91	101	40	46	21	6	527
Quebec	2,010	1,386	1,611	1,951	940	623	354	94	9,020
Ontario	2,468	1,893	2,140	2,418	1,241	915	560	165	11,880
Manitoba	298	192	213	227	105	91	31	11	1,171
Saskatchewan	184	123	128	95	46	24	—	12	612
Alberta	457	389	336	324	132	91	48	13	1,790
British Columbia	942	559	511	481	229	160	105	26	3,025
Yukon and Northwest Territories	7	6	4	7	—	—	—	—	24
Canada	6,784	4,795	5,225	5,773	2,828	2,015	1,159	320	29,053

18.5 Establishments in the manufacturing industries, by number employed and by province, 1976-78 (concluded)

Year and province or territory	Number employed									Total
	Under 5	5 to 9	10 to 19	20 to 49	50 to 99	100 to 199	200 to 499	500 to 999	1,000 or over	
1977										
Newfoundland	64	37	26	41	26	21	13	2	2	232
Prince Edward Island	41	16	18	17	8	2	2	—	—	104
Nova Scotia	180	98	122	105	60	29	27	5	4	630
New Brunswick	117	88	80	94	42	43	21	7	3	495
Quebec	1,912	1,256	1,491	1,844	942	560	332	90	48	8,475
Ontario	2,428	1,749	1,972	2,356	1,223	894	548	175	69	11,414
Manitoba	292	197	182	215	111	85	31	8	4	1,125
Saskatchewan	182	103	131	96	43	20	15	1	1	592
Alberta	445	355	304	322	144	101	47	12	1	1,731
British Columbia	919	518	473	460	223	149	118	28	11	2,899
Yukon and Northwest Territories	6	5	6	1	—	—	—	—	—	18
Canada	6,586	4,422	4,805	5,551	2,822	1,904	1,154	328	143	27,715
1978										
Newfoundland	84	42	74	—	27	—	42	—	—	269
Prince Edward Island	44	25	27	21	9	4	—	—	—	130
Nova Scotia	205	125	128	127	58	35	27	5	4	714
New Brunswick	153	113	82	114	42	38	28	6	3	579
Quebec	2,412	1,544	1,694	2,045	932	598	338	86	52	9,701
Ontario	3,173	2,061	2,144	2,613	1,344	912	586	173	73	13,079
Manitoba	355	220	219	231	106	86	35	7	4	1,263
Saskatchewan	221	134	123	111	48	—	39	—	—	676
Alberta	583	390	386	376	165	91	45	14	—	2,050
British Columbia	1,245	625	543	510	231	159	115	39	11	3,478
Yukon and Northwest Territories	6	9	9	—	—	—	—	—	—	24
Canada	8,481	5,288	5,429	6,148	2,962	2,004	1,174	330	147	31,963

18.6 Number of establishments in manufacturing industries, by industry group and employment size group, 1976-78

Year and industry group	Establishments with total employment of									Total
	Under 5	5 to 9	10 to 19	20 to 49	50 to 99	100 to 199	200 to 499	500 to 999	1,000 or over	
1976										
Food and beverage industries	1,302	821	750	771	375	284	164	39	15	4,521
Tobacco products industries	3	1	1	5	1	3	5	3	2	24
Rubber and plastics products industries	112	108	141	213	91	61	32	10	8	776
Leather industries	48	55	50	111	51	67	20	3	—	405
Textile industries	164	139	166	173	84	75	67	16	7	891
Knitting mills	17	29	33	74	55	55	19	4	—	286
Clothing industries	305	207	318	590	332	190	66	9	1	2,018
Wood industries	776	463	460	458	264	177	91	12	2	2,703
Furniture and fixture industries	670	289	248	291	128	90	35	1	—	1,752
Paper and allied industries	33	49	73	145	94	100	94	47	26	661
Printing, publishing and allied industries	1,196	723	678	491	191	76	50	15	7	3,427
Primary metal industries	24	28	42	95	46	63	40	25	19	382
Metal fabricating industries (except machinery and transportation equipment industries)	832	710	844	882	314	216	102	23	4	3,927
Machinery industries (except electrical machinery)	137	153	203	287	146	94	65	16	10	1,111
Transportation equipment industries	162	119	158	199	108	102	62	28	30	968
Electrical products industries	91	66	124	153	143	91	86	37	18	809
Non-metallic mineral products industries	212	217	275	248	105	76	39	8	2	1,182
Petroleum and coal products industries	17	12	8	19	10	14	15	3	—	98
Chemical and chemical products industries	146	158	198	225	135	87	69	17	4	1,039
Miscellaneous manufacturing industries	537	448	455	343	155	78	49	5	3	2,073

18.6 Number of establishments in manufacturing industries, by industry group and employment size group, 1976-78 (concluded)

Year and industry group	Establishments with total employment of									Total
	Under 5	5 to 9	10 to 19	20 to 49	50 to 99	100 to 199	200 to 499	500 to 999	1,000 or over	
1977										
Food and beverage industries	1,203	720	651	729	394	286	175	39	14	4,211
Tobacco products industries	3	1	2	4	1	4	4	3	2	24
Rubber and plastics products industries	118	92	133	201	103	55	36	9	8	755
Leather industries	51	43	52	101	61	47	20	3	—	378
Textile industries	150	114	170	167	73	74	61	16	6	831
Knitting mills	19	16	36	75	48	52	18	2	—	266
Clothing industries	274	192	290	518	321	168	65	8	1	1,837
Wood industries	730	397	427	452	242	171	105	16	2	2,542
Furniture and fixture industries	654	273	223	296	126	74	31	1	—	1,678
Paper and allied industries	34	47	65	148	95	100	91	44	23	647
Printing, publishing and allied industries	1,114	728	646	476	185	82	48	16	6	3,301
Primary metal industries	27	31	43	86	52	58	43	21	21	382
Metal fabricating industries (except machinery and transportation equipment industries)	799	662	823	856	336	207	90	23	3	3,799
Machinery industries (except electrical machinery)	161	136	178	284	153	101	59	17	10	1,099
Transportation equipment industries	162	118	126	178	115	83	64	31	28	905
Electrical products industries	97	69	97	163	130	94	80	40	11	781
Non-metallic mineral products industries	208	217	244	238	100	75	38	9	2	1,131
Petroleum and coal products industries	19	14	11	17	9	13	16	4	—	103
Chemical and chemical products industries	143	167	184	221	128	92	69	19	4	1,027
Miscellaneous manufacturing industries	620	385	404	341	150	68	41	7	2	2,018
1978										
Food and beverage industries	1,365	764	708	775	384	295	194	35	15	4,535
Tobacco products industries	4	—	4	3	1	3	5	3	2	25
Rubber and plastics products industries	177	125	172	235	117	54	41	9	8	938
Leather industries	61	53	55	107	60	48	19	4	—	407
Textile industries	173	144	182	172	85	71	63	18	6	914
Knitting mills	23	22	38	83	35	51	19	2	—	273
Clothing industries	329	257	324	589	321	173	72	8	1	2,074
Wood industries	895	463	487	525	249	181	105	20	3	2,928
Furniture and fixture industries	831	321	257	314	131	76	33	1	—	1,964
Paper and allied industries	46	54	77	170	88	107	88	45	24	699
Printing, publishing and allied industries	1,339	858	665	543	192	86	53	15	5	3,756
Primary metal industries	28	39	40	91	52	64	43	25	20	402
Metal fabricating industries (except machinery and transportation equipment industries)	1,097	808	913	960	395	199	96	25	3	4,496
Machinery industries (except electrical machinery)	220	166	214	342	184	111	58	17	11	1,323
Transportation equipment industries	228	150	146	217	114	92	70	31	30	1,078
Electrical products industries	152	116	139	186	140	103	82	34	14	966
Non-metallic mineral products industries	420	297	308	265	97	78	40	10	1	1,516
Petroleum and coal products industries	19	15	10	14	10	15	15	6	—	104
Chemical and chemical products industries	248	175	209	226	151	90	66	18	6	1,189
Miscellaneous manufacturing industries	826	460	433	380	155	72	44	4	2	2,376

18.7 Establishments and shipments in the manufacturing industries, by shipments per establishment, 1976-78

Year and value group	Establishments No.	Value of shipments of goods of own manufacture \$ '000	Average per establishment \$ '000	Proportion of total shipments %
1976				
Up to \$99,999	5,938	313,259	53	0.3
\$ 100,000 - \$ 199,999	3,872	561,570	145	0.6
200,000 - 499,999	5,461	1,790,437	328	1.8
500,000 - 999,999	3,951	2,870,755	727	2.9
1,000,000 - 4,999,999	6,470	14,831,376	2,292	15.1
5,000,000 - 9,999,999	1,563	10,890,981	6,968	11.1
10,000,000 - 24,999,999	1,157	17,915,102	15,484	18.2
25,000,000 - 49,999,999	375	13,337,984	35,568	13.6
50,000,000 and over	266	35,769,312	135,471	36.4
Total and average	29,053	98,280,777	3,383	100.0

18.7 Establishments and shipments in the manufacturing industries, by shipments per establishment, 1976-78 (concluded)

Year and value group	Establishments No.	Value of shipments of goods of own manufacture \$'000	Average per establishment \$'000	Proportion of total shipments %
1977				
Up to \$99,999	5,266	270,078	51	0.2
\$ 100,000 - \$ 199,999	3,471	503,544	145	0.5
200,000 - 499,999	5,033	1,650,506	328	1.5
500,000 - 999,999	3,888	2,828,921	728	2.6
1,000,000 - 4,999,999	6,474	14,891,893	2,300	13.7
5,000,000 - 9,999,999	1,650	11,470,544	6,952	10.5
10,000,000 - 24,999,999	1,213	18,862,097	15,550	17.3
25,000,000 - 49,999,999	415	14,577,781	35,127	13.4
50,000,000 and over	305	43,797,068	143,597	40.2
Total and average	27,715	108,852,431	3,928	100.0
1978				
Up to \$99,999	6,774	336,540	50	0.3
\$ 100,000 - \$ 199,999	4,050	584,392	144	0.4
200,000 - 499,999	5,655	1,836,828	325	1.4
500,000 - 999,999	4,296	3,085,397	718	2.4
1,000,000 - 4,999,999	7,119	16,281,864	2,287	12.6
5,000,000 - 9,999,999	1,822	12,838,893	7,047	10.0
10,000,000 - 24,999,999	1,388	21,587,986	15,553	16.7
25,000,000 - 49,999,999	477	16,246,243	34,059	12.6
50,000,000 and over	382	56,221,076	147,176	43.6
Total and average	31,963	129,019,220	4,037	100.0

18.8 Establishments in the manufacturing industries, by value of shipments of goods of own manufacture and by province, 1976-78

Year and province or territory	Up to \$99,999	\$100,000 to \$199,999	\$200,000 to \$499,999	\$500,000 to \$999,999	\$1,000,000 to \$4,999,999	\$5,000,000 to \$9,999,999	\$10,000,000 to \$24,999,999	\$25,000,000 to \$49,999,999	\$50,000,000 and over	Total
1976										
Nfld.	77	26	34	22	67	13	10	—	—	249
PEI	42	—	24	—	37	—	3	—	—	106
NS	161	90	134	85	119	30	16	5	9	649
NB	122	69	90	77	103	35	20	—	11	527
Que.	1,750	1,170	1,725	1,300	2,159	430	309	103	74	9,020
Ont.	2,169	1,525	2,203	1,640	2,764	724	543	179	133	11,880
Man.	259	170	215	150	252	68	41	11	5	1,171
Sask.	163	98	113	66	122	30	—	16	—	612
Alta.	395	283	349	224	357	75	66	26	15	1,790
BC	789	441	566	345	527	158	133	40	26	3,025
YT and NWT	—	11	8	—	5	—	—	—	—	24
Canada	5,938	3,872	5,461	3,951	6,470	1,563	1,157	375	266	29,053
1977										
Nfld.	56	20	36	26	64	21	5	4	—	232
PEI	32	10	21	—	38	—	3	—	—	104
NS	152	85	119	88	124	26	21	6	9	630
NB	107	58	83	71	108	34	—	24	10	495
Que.	1,520	1,041	1,617	1,220	2,124	448	318	100	87	8,475
Ont.	1,941	1,345	2,036	1,614	2,786	772	577	201	142	11,414
Man.	250	157	195	128	265	76	37	12	5	1,125
Sask.	147	93	110	71	117	33	15	—	6	592
Alta.	349	261	295	243	384	83	63	33	20	1,731
BC	706	398	517	384	502	157	150	53	32	2,899
YT and NWT	6	3	4	—	5	—	—	—	—	18
Canada	5,266	3,471	5,033	3,888	6,474	1,650	1,213	415	305	27,715
1978										
Nfld.	79	19	38	—	28	93	9	—	3	269
PEI	40	16	21	18	29	3	3	—	—	130
NS	199	79	120	91	149	33	—	30	13	714
NB	145	68	88	85	114	40	24	7	8	579
Que.	1,940	1,238	1,769	1,393	2,272	509	354	121	105	9,701
Ont.	2,524	1,530	2,307	1,829	2,958	862	654	246	169	13,079
Man.	289	179	229	138	273	87	47	13	8	1,263
Sask.	161	118	128	82	128	34	—	20	5	676
Alta.	446	277	364	257	475	102	75	24	30	2,050
BC	945	521	586	370	625	152	172	66	41	3,478
YT and NWT	6	5	5	—	5	3	—	—	—	24
Canada	6,774	4,050	5,655	4,296	7,119	1,822	1,388	477	382	31,963

18.9 Establishments and employment in the manufacturing industries, by number employed per establishment, 1976-78

Year and size group			Estab- lishments No.	Employees No.	Working owners and partners No.	Proportion of total employment ¹ %
1976						
Under	5	employed	6,784	12,370	3,856	0.7
5 -	9	"	4,795	31,251	1,164	1.8
10 -	19	"	5,225	72,216	421	4.1
20 -	49	"	5,773	181,654	174	10.4
50 -	99	"	2,828	197,218	40	11.3
100 -	199	"	2,015	288,854	7	16.6
200 -	499	"	1,159	352,834	4	20.2
500 -	999	"	320	213,123	—	12.2
1,000 or more		"	154	304,999	—	17.5
Head offices			—	88,528	—	5.1
Total			29,053	1,743,047	5,666	100.0
1977						
Under	5	employed	6,586	11,816	3,464	0.7
5 -	9	"	4,422	28,850	940	1.7
10 -	19	"	4,805	66,846	296	3.9
20 -	49	"	5,551	174,828	129	10.3
50 -	99	"	2,822	197,045	22	11.6
100 -	199	"	7,923	275,461	6	16.2
200 -	499	"	1,141	346,548	2	20.3
500 -	999	"	326	218,505	—	12.8
1,000 or more		"	139	295,384	—	17.3
Head offices			—	89,132	—	5.2
Total			27,715	1,704,415	4,859	100.0
1978						
Under	5	employed	8,481	14,939	4,375	0.8
5 -	9	"	5,288	34,290	1,186	1.9
10 -	19	"	5,429	75,816	305	4.2
20 -	49	"	6,148	193,375	120	10.8
50 -	99	"	2,962	207,346	6	11.6
100 -	199	"	2,004	292,544	10	16.3
200 -	499	"	1,174	352,745	25	19.7
500 -	999	"	330	219,425	—	12.3
1,000 or more		"	147	307,589	—	17.2
Head offices			—	92,780	—	5.2
Total			31,963	1,790,849	6,027	100.0

¹Includes working owners and partners.**18.10 Trends in domestic exports of manufactures, 1968-78 (million dollars)**

Year	Fabricated materials	End products	Total manufactured goods ¹
1968	4,855.1	4,296.5	9,151.6
1969	5,162.7	5,378.2	10,540.9
1970	5,866.4	5,551.0	11,417.4
1971	5,796.8	6,193.2	11,990.0
1972	6,568.0	7,136.2	13,704.2
1973	8,194.1	8,308.1	16,502.2
1974	10,695.7	9,235.5	19,931.3
1975	9,840.3	10,358.7	20,199.0
1976	12,189.1	12,708.0	24,897.1
1977	14,924.8	15,117.2	30,042.0
1978	18,890.6	18,591.1	37,481.7

¹These categories of exports are only approximately equivalent to exports of manufactured goods.

18.11 Summary statistics of manufactures, by industry group, 1976-78

Year and industry group	Establishments No.	Manufacturing activity			Cost of fuel and electricity \$'000	Cost of materials and supplies \$'000	Value of shipments of goods of own manufacture \$'000	Value added \$'000	Total activity		Total value added \$'000
		Production	and related	workers					Total employees	Salaries and wages \$'000	
		Number	Man-hours paid '000	Wages \$'000					Number		
1976											
Food and beverage industries	4,521	146,217	307,896	1,611,576	231,386	11,654,128	17,291,817	5,485,974	219,646	2,624,689	5,876,104
Tobacco products industries	34	6,125	11,649	79,035	4,248	528,398	886,283	381,551	9,085	125,744	383,619
Rubber and plastics products industries	776	61,255	85,644	426,252	44,963	1,328,479	2,313,186	1,108,806	55,309	622,455	1,169,840
Leather industries	405	22,843	46,640	177,229	5,665	1,358,406	2,000,851	1,347,770	26,461	266,831	363,407
Textile industries	891	53,950	112,330	482,384	57,936	1,492,958	2,000,821	1,175,008	68,209	682,746	1,206,360
Knitting mills	286	20,724	42,760	157,661	6,992	1,325,855	2,570,280	1,351,684	23,525	192,949	302,145
Clothing industries	2,018	90,159	178,342	651,921	9,445	1,343,932	2,570,280	1,258,816	101,719	821,113	1,312,422
Wood industries	2,703	90,007	187,888	1,098,497	105,088	2,770,365	4,998,667	2,206,998	106,178	1,352,849	2,235,880
Furniture and fixture industries	1,752	40,054	85,686	364,381	14,040	1,714,568	1,467,667	760,882	47,874	474,151	771,399
Paper and allied industries	661	98,335	203,620	1,380,745	571,739	4,038,478	8,238,695	3,783,524	130,207	1,937,848	3,844,141
Printing, publishing and allied industries	3,427	54,898	108,866	653,193	19,318	1,144,772	3,240,301	2,084,516	95,487	1,171,015	2,113,334
Primary metal industries	382	88,939	182,119	1,241,893	375,938	3,785,745	7,029,031	2,968,137	117,041	1,793,128	3,027,268
Metal fabricating industries (except machinery and transportation equipment industries ¹)	3,927	117,929	247,120	1,390,347	77,095	3,389,269	6,812,924	3,410,065	152,127	1,926,231	3,565,345
Machinery industries (except electrical machinery)	1,111	59,455	124,330	719,377	34,621	2,061,897	3,885,045	1,822,443	89,201	1,151,828	2,089,036
Transportation equipment industries	968	125,455	267,377	1,701,852	100,816	9,037,373	13,200,876	4,111,985	84,277	2,375,584	4,762,553
Electrical products industries	809	79,683	164,462	845,897	41,522	2,309,318	4,733,103	2,420,712	12,274	1,401,756	2,746,550
Non-metallic mineral products industries	1,182	41,272	87,029	529,264	214,425	1,093,503	2,841,318	1,563,521	55,021	1,401,756	1,627,283
Petroleum and coal products industries	98	7,099	15,246	127,594	65,463	5,919,408	6,922,798	1,017,211	11,689	330,316	1,024,200
Chemical and chemical products industries	1,039	43,119	90,461	541,997	325,485	2,845,931	5,704,157	2,601,192	79,397	1,150,391	2,841,975
Miscellaneous manufacturing industries	2,073	49,512	100,771	426,679	19,080	1,004,842	2,125,808	1,121,262	66,373	674,893	1,290,609
Total	29,053	1,277,352	2,650,237	14,602,171	2,325,265	56,982,416	98,280,777	39,921,919	1,743,050	21,799,734	42,553,272
1977											
Food and beverage industries	4,211	148,303	309,849	1,773,895	269,464	12,619,981	18,871,720	6,086,110	222,858	2,889,594	6,549,162
Tobacco products industries	34	5,741	10,784	86,512	5,054	508,198	945,384	429,216	8,933	138,976	432,906
Rubber and plastics products industries	755	41,743	83,638	463,551	54,179	1,299,280	2,532,361	1,242,665	55,699	681,842	1,323,679
Leather industries	405	22,843	46,640	177,229	5,665	1,358,406	2,000,851	1,347,770	26,461	266,831	363,407
Textile industries	891	53,950	112,330	482,384	57,936	1,492,958	2,000,821	1,175,008	68,209	682,746	1,206,360
Knitting mills	286	20,724	42,760	157,661	6,992	1,325,855	2,570,280	1,351,684	23,525	192,949	302,145
Clothing industries	2,018	90,159	178,342	651,921	9,445	1,343,932	2,570,280	1,258,816	101,719	821,113	1,312,422
Wood industries	2,703	90,007	187,888	1,098,497	105,088	2,770,365	4,998,667	2,206,998	106,178	1,352,849	2,235,880
Furniture and fixture industries	1,752	40,054	85,686	364,381	14,040	1,714,568	1,467,667	760,882	47,874	474,151	771,399
Paper and allied industries	661	98,335	203,620	1,380,745	571,739	4,038,478	8,238,695	3,783,524	130,207	1,937,848	3,844,141
Printing, publishing and allied industries	3,427	54,898	108,866	653,193	19,318	1,144,772	3,240,301	2,084,516	95,487	1,171,015	2,113,334
Primary metal industries	382	88,939	182,119	1,241,893	375,938	3,785,745	7,029,031	2,968,137	117,041	1,793,128	3,027,268
Metal fabricating industries (except machinery and transportation equipment industries ¹)	3,927	117,929	247,120	1,390,347	77,095	3,389,269	6,812,924	3,410,065	152,127	1,926,231	3,565,345
Machinery industries (except electrical machinery)	1,111	59,455	124,330	719,377	34,621	2,061,897	3,885,045	1,822,443	89,201	1,151,828	2,089,036
Transportation equipment industries	968	125,455	267,377	1,701,852	100,816	9,037,373	13,200,876	4,111,985	84,277	2,375,584	4,762,553
Electrical products industries	809	79,683	164,462	845,897	41,522	2,309,318	4,733,103	2,420,712	12,274	1,401,756	2,746,550
Non-metallic mineral products industries	1,182	41,272	87,029	529,264	214,425	1,093,503	2,841,318	1,563,521	55,021	1,401,756	1,627,283
Petroleum and coal products industries	98	7,099	15,246	127,594	65,463	5,919,408	6,922,798	1,017,211	11,689	330,316	1,024,200
Chemical and chemical products industries	1,039	43,119	90,461	541,997	325,485	2,845,931	5,704,157	2,601,192	79,397	1,150,391	2,841,975
Miscellaneous manufacturing industries	2,073	49,512	100,771	426,679	19,080	1,004,842	2,125,808	1,121,262	66,373	674,893	1,290,609
Total	29,053	1,277,352	2,650,237	14,602,171	2,325,265	56,982,416	98,280,777	39,921,919	1,743,050	21,799,734	42,553,272
1978											
Food and beverage industries	4,211	148,303	309,849	1,773,895	269,464	12,619,981	18,871,720	6,086,110	222,858	2,889,594	6,549,162
Tobacco products industries	34	5,741	10,784	86,512	5,054	508,198	945,384	429,216	8,933	138,976	432,906
Rubber and plastics products industries	755	41,743	83,638	463,551	54,179	1,299,280	2,532,361	1,242,665	55,699	681,842	1,323,679
Leather industries	405	22,843	46,640	177,229	5,665	1,358,406	2,000,851	1,347,770	26,461	266,831	363,407
Textile industries	891	53,950	112,330	482,384	57,936	1,492,958	2,000,821	1,175,008	68,209	682,746	1,206,360
Knitting mills	286	20,724	42,760	157,661	6,992	1,325,855	2,570,280	1,351,684	23,525	192,949	302,145
Clothing industries	2,018	90,159	178,342	651,921	9,445	1,343,932	2,570,280	1,258,816	101,719	821,113	1,312,422
Wood industries	2,703	90,007	187,888	1,098,497	105,088	2,770,365	4,998,667	2,206,998	106,178	1,352,849	2,235,880
Furniture and fixture industries	1,752	40,054	85,686	364,381	14,040	1,714,568	1,467,667	760,882	47,874	474,151	771,399
Paper and allied industries	661	98,335	203,620	1,380,745	571,739	4,038,478	8,238,695	3,783,524	130,207	1,937,848	3,844,141
Printing, publishing and allied industries	3,427	54,898	108,866	653,193	19,318	1,144,772	3,240,301	2,084,516	95,487	1,171,015	2,113,334
Primary metal industries	382	88,939	182,119	1,241,893	375,938	3,785,745	7,029,031	2,968,137	117,041	1,793,128	3,027,268
Metal fabricating industries (except machinery and transportation equipment industries ¹)	3,927	117,929	247,120	1,390,347	77,095	3,389,269	6,812,924	3,410,065	152,127	1,926,231	3,565,345
Machinery industries (except electrical machinery)	1,111	59,455	124,330	719,377	34,621	2,061,897	3,885,045	1,822,443	89,201	1,151,828	2,089,036
Transportation equipment industries	968	125,455	267,377	1,701,852	100,816	9,037,373	13,200,876	4,111,985	84,277	2,375,584	4,762,553
Electrical products industries	809	79,683	164,462	845,897	41,522	2,309,318	4,733,103	2,420,712	12,274	1,401,756	2,746,550
Non-metallic mineral products industries	1,182	41,272	87,029	529,264	214,425	1,093,503	2,841,318	1,563,521	55,021	1,401,756	1,627,283
Petroleum and coal products industries	98	7,099	15,246	127,594	65,463	5,919,408	6,922,798	1,017,211	11,689	330,316	1,024,200
Chemical and chemical products industries	1,039	43,119	90,461	541,997	325,485	2,845,931	5,704,157	2,601,192	79,397	1,150,391	2,841,975
Miscellaneous manufacturing industries	2,073	49,512	100,771	426,679	19,080	1,004,842	2,125,808	1,121,262	66,373	674,893	1,290,609
Total	29,053	1,277,352	2,650,237	14,602,171	2,325,265	56,982,416	98,280,777	39,921,919	1,743,050	21,799,734	42,553,272
1979											
Food and beverage industries	4,211	148,303	309,849	1,773,895	269,464	12,619,981	18,871,720	6,086,110	222,858	2,889,594	6,549,162
Tobacco products industries	34	5,741	10,784	86,512	5,054	508,198	945,384	429,216	8,933	138,976	432,906
Rubber and plastics products industries	755	41,743	83,638	463,551	54,179	1,299,280	2,532,361	1,242,665	55,699	681,842	1,323,679
Leather industries	405	22,843	46,640	177,229	5,665	1,358,406	2,000,851	1,347,770	26,461	266,831	363,407
Textile industries	891	53,950	112,330	482,384	57,936	1,492,958	2,000,821	1,175,008	68,209	682,746	1,206,360
Knitting mills	286	20,724	42,760	157,661	6,992	1,325,855	2,570,280	1,351,684	23,525	192,949	302,145
Clothing industries	2,018	90,159	178,342	651,921	9,445	1,343,932	2,570,280	1,258,816	101,719	821,113	1,312,422
Wood industries	2,703	90,007	187,888	1,098,497	105,088	2,770,365	4,998,667	2,206,998	106,178	1,352,849	2,235,880
Furniture and fixture industries	1,752	40,054	85,686	364,381	14,040	1,714,568	1,467,667	760,882	47,874	474,151	771,399
Paper and allied industries	661	98,335	203,620	1,380,745	571,739	4,038,478	8,238,695	3,783,524	130,207	1,937,848	3,844,141
Printing, publishing and allied industries	3,427	54,898	108,866	653,193	19,318	1,144,772	3,240,301	2,084,516	95,487	1,171,015	2,113,334
Primary metal industries	382	88,939	182,119	1,241,893	375,938	3,785,745	7,029,031	2,968,137	117,041	1,793,128	3,027,268
Metal fabricating industries (except machinery and transportation equipment industries ¹)	3,927	117,929	247,120	1,390,347	77,095	3,389,269	6,812,924	3,410,065	152,127	1,926,231	3,565,345
Machinery industries (except electrical machinery)	1,111	59,455	124,330	719,377	34,621	2,061,897	3,885,045	1,822,443	89,201</		

18.11 Summary statistics of manufactures, by industry group, 1976-78 (concluded)

Year and industry group	Establish- ments No.	Manufacturing activity			Cost of fuel and electricity \$/000	Cost of materials and sup- plies used \$/000	Value of shipments of goods of own manu- facture \$/000	Value added \$/000	Total activity		Total value added \$/000
		Production and related workers	Man- hours paid /000	Wages \$/000					Total employees Number	Salaries and wages \$/000	
1977 (concluded)											
Metal fabricating industries (except machinery and transportation equipment industries)	3,799	112,662	236,544	1,458,429	88,893	3,604,941	7,232,181	3,556,645	146,735	2,035,200	3,698,983
Machinery industries (except electrical machinery)	1,099	58,024	119,485	769,547	40,554	2,205,319	4,159,762	1,945,394	87,657	1,238,612	2,239,962
Transportation equipment industries	905	126,496	273,679	1,945,069	121,828	10,336,774	15,064,813	4,848,053	165,287	2,671,795	5,466,963
Electrical products industries	781	71,672	147,321	838,260	47,109	2,285,014	4,060,023	2,558,905	110,813	1,484,638	2,833,605
Non-metallic mineral products industries	1,131	39,321	83,436	564,443	247,505	1,158,430	2,990,944	1,605,526	52,518	794,428	1,652,852
Petroleum and coal products industries	103	7,696	16,253	146,566	88,234	7,634,002	8,532,666	1,272,678	17,849	375,098	1,287,945
Chemical and chemical products industries	1,027	43,996	92,252	615,624	385,564	3,284,271	6,431,471	2,828,781	81,805	1,289,431	3,135,259
Miscellaneous manufacturing industries	2,018	44,948	91,921	435,506	21,768	1,068,506	2,225,270	1,165,766	61,977	705,052	1,343,992
Total	27,715	1,242,037	2,577,290	15,813,415	2,790,150	62,981,193	108,855,794	44,113,454	1,704,415	23,592,410	46,778,453
1978											
Food and beverage industries	4,535	153,935	322,604	1,967,398	306,520	14,877,808	21,955,726	6,920,882	229,906	3,181,368	7,463,167
Tobacco products industries	938	5,716	10,798	86,703	5,538	581,850	1,996,429	431,042	8,778	143,281	440,714
Rubber and plastics products industries	938	45,806	93,729	592,202	64,670	1,533,833	3,059,906	1,451,312	60,455	787,547	1,540,584
Leather industries	974	21,019	43,056	194,561	4,455	456,204	848,962	399,801	24,415	249,309	422,907
Textile industries	273	15,566	36,127	579,272	80,314	1,848,232	3,403,502	1,470,207	67,808	816,066	1,498,008
Knitting mills	273	15,566	36,127	579,272	9,330	377,232	711,796	335,072	20,003	199,056	334,487
Clothing industries	2,074	87,258	172,998	764,100	11,741	1,588,337	3,114,860	1,553,008	99,517	965,704	1,605,907
Wood industries	2,928	100,491	209,594	1,481,860	158,730	3,916,497	7,476,619	3,506,568	119,004	1,820,646	3,549,741
Furniture and fixture industries	1,964	39,293	82,436	414,576	17,423	804,489	1,703,827	891,098	46,613	531,169	900,483
Paper and allied industries	1,499	96,882	202,655	1,653,935	833,309	4,747,011	10,197,285	4,538,801	126,783	2,281,874	4,564,847
Printing, publishing and allied industries	3,756	55,985	113,062	790,761	25,684	1,492,158	4,089,680	2,592,527	98,037	1,424,974	2,635,354
Primary metal industries	402	93,798	190,598	1,544,412	562,997	5,241,860	10,119,542	4,296,118	121,996	2,140,955	4,347,605
Metal fabricating industries (except machinery and transportation equipment industries)	4,496	121,329	254,336	1,673,704	104,387	4,282,792	8,464,875	4,187,262	156,665	2,309,473	4,381,864
Machinery industries (except electrical machinery)	1,323	61,967	129,611	885,248	47,472	2,638,915	5,037,502	2,399,292	92,113	1,403,758	2,720,441
Transportation equipment industries	1,078	137,230	294,292	2,260,452	142,494	12,320,558	18,022,888	5,867,417	178,636	3,102,406	6,469,377
Electrical products industries	966	74,683	154,931	945,124	54,712	2,609,179	5,435,292	2,883,179	114,279	1,641,640	3,178,007
Non-metallic mineral products industries	1,516	41,404	89,020	639,598	301,325	1,378,725	3,602,657	1,931,000	55,843	903,765	1,978,295
Petroleum and coal products industries	104	8,852	19,207	183,611	117,194	9,060,370	10,449,426	1,240,928	20,383	451,454	1,250,796
Chemical and chemical products industries	1,189	45,136	95,942	675,784	520,345	3,791,837	7,591,825	3,433,200	84,786	1,424,087	3,477,546
Miscellaneous manufacturing industries	2,376	47,234	96,244	493,345	25,599	1,396,464	2,736,772	1,350,537	64,829	798,599	1,574,546
Total	31,963	1,310,524	2,721,381	17,933,370	3,397,240	74,894,056	129,019,220	51,679,262	1,790,849	26,577,136	54,634,611

18.12 Summary statistics of the 40 leading industries, ranked according to value of shipments of goods of own manufacture, 1976 and 1977

Year and industry	Estab- lish- ments No.	Manufacturing activity			Cost of fuel and elec- tricity used \$ '000	Cost of materials and supplies \$ '000	Value of shipments of goods of own manu- facture \$ '000	Value added \$ '000	Total employees		Total value added \$ '000
		Production Number	Man- hours paid '000	Wages \$ '000					Number	Salaries and wages \$ '000	
1976											
1 Motor vehicle manufacturers	23	35,122	77,089	539,128	31,647	5,919,261	7,276,146	1,350,964	49,079	798,696	1,874,407
2 Petroleum refining	39	6,084	13,070	115,166	61,354	5,798,853	6,725,723	944,843	15,105	298,960	845,816
3 Pulp and paper mills	147	66,946	139,464	1,033,475	546,274	2,732,640	5,997,721	2,845,278	86,995	1,415,844	2,876,418
4 Slaughtering and meat processors	467	24,951	52,715	318,575	30,393	3,175,541	3,989,997	797,734	33,237	439,340	818,118
5 Iron and steel mills	46	40,573	84,213	611,758	174,469	1,888,374	3,460,059	1,468,650	51,978	832,503	1,485,808
6 Motor vehicle parts and accessories manufacturers	238	39,134	84,046	558,132	38,847	1,733,017	3,112,323	1,400,481	47,331	699,264	1,428,498
7 Sawmills and planing mills	1,213	47,838	100,890	641,722	68,897	1,603,592	2,878,325	1,262,426	56,408	774,169	1,267,923
8 Dairy products industry	491	13,626	29,033	158,403	39,652	2,131,085	2,811,178	637,593	26,280	323,548	700,772
9 Miscellaneous machinery and equipment manufacturers	877	39,277	82,047	459,285	21,474	1,182,492	2,418,660	1,234,578	58,817	738,147	1,368,988
10 Miscellaneous food processors	251	11,611	23,838	128,758	24,647	1,025,308	1,708,718	657,666	20,014	250,572	706,164
11 Metal stamping and pressing industry	544	20,921	43,964	244,833	14,035	891,315	1,560,457	690,316	26,652	339,412	716,481
12 Commercial printing	1,978	32,623	64,837	368,533	10,361	613,032	1,443,026	844,333	43,353	529,373	858,249
13 Smelting and refining	28	23,294	45,150	314,963	156,870	505,255	1,443,307	781,182	34,246	511,696	813,654
14 Communications equipment manufacturers	261	24,136	50,149	265,721	7,280	506,197	1,383,162	864,324	38,467	498,665	953,838
15 Feed industry	608	5,389	11,610	59,014	14,586	1,037,624	1,292,509	242,880	8,820	100,216	275,756
16 Rubber products industries	115	19,543	40,664	225,350	26,024	571,518	1,212,168	604,728	28,618	350,663	653,562
17 Manufacturers of industrial chemicals (organic)	35	5,649	11,908	90,264	114,034	613,748	1,180,699	456,803	10,714	191,887	491,681
18 Publishing and printing	574	17,190	34,007	218,812	7,724	299,052	1,147,866	842,081	34,275	447,595	839,120
19 Plastics fabricating industry	661	22,034	44,981	200,901	18,939	588,961	1,101,587	504,078	26,691	271,792	516,278
20 Manufacturers of electrical industrial equipment	200	19,165	39,626	211,396	9,810	449,417	1,019,130	572,538	31,427	400,607	659,090
21 Men's clothing factories	485	33,481	68,003	253,916	3,664	539,271	1,015,620	497,249	38,380	327,379	513,417
22 Miscellaneous metal fabricating industries	524	18,277	38,112	194,980	14,351	492,154	994,555	490,356	23,704	275,487	504,393
23 Women's clothing factories	566	26,756	51,326	198,985	2,651	512,557	913,509	407,593	30,292	246,252	427,235
24 Manufacturers of industrial chemicals (inorganic)	89	6,239	13,319	101,690	152,100	354,672	908,328	409,696	9,502	157,840	421,425
25 Agricultural implement industry	148	12,934	27,231	175,455	8,826	510,668	853,055	349,621	16,461	230,393	371,756
26 Fabricated structural metal industry	159	13,549	28,241	198,324	7,733	369,273	840,496	468,746	18,056	276,497	513,125
27 Fruit and vegetable canners and preservers	204	10,681	22,496	94,524	10,711	500,787	832,997	326,547	14,455	146,227	361,686
28 Bakeries	1,478	16,422	34,189	170,354	18,217	375,913	832,604	439,424	25,966	284,409	466,711
29 Miscellaneous chemical industries	311	18,194	37,048	90,045	15,203	420,811	798,617	367,701	14,918	195,392	409,852
30 Miscellaneous paper converters	215	11,473	23,469	119,103	9,208	435,002	778,044	342,620	16,772	194,885	368,189
31 Household furniture manufacturers	653	22,633	48,886	202,099	7,666	372,812	770,123	420,238	26,457	254,357	403,375
32 Soft drink manufacturers	272	6,930	14,847	79,139	10,941	390,554	751,382	351,510	14,296	180,723	395,419
33 Fish products manufacturers	319	16,695	35,944	148,743	13,809	470,251	742,002	285,273	19,568	185,289	336,890
34 Breweries	42	7,033	14,726	112,385	14,897	241,947	736,052	481,663	11,632	194,643	493,645
35 Aircraft and aircraft parts manufacturers	103	12,926	27,517	151,858	7,725	262,085	723,237	454,543	21,215	281,875	467,532
36 Manufacturers of pharmaceuticals and medicines	132	6,476	13,178	66,984	7,047	267,059	698,789	431,117	14,434	189,069	475,569
37 Wire and wire products manufacturers	245	10,362	21,750	112,530	8,455	391,092	691,778	298,253	13,069	153,603	309,744
38 Tobacco products manufacturers	15	5,320	10,009	71,919	3,169	288,409	656,841	367,850	8,076	115,389	368,616
39 Manufacturers of electric wire and cable	37	6,900	14,318	84,093	7,846	420,412	648,694	219,758	9,649	127,621	219,407
40 Ready-mix concrete manufacturers	348	7,232	15,489	102,125	18,365	344,736	633,490	271,448	9,128	133,282	282,614

18.12 Summary statistics of the 40 leading industries, ranked according to value of shipments of goods of own manufacture, 1976 and 1977 (concluded)

Year and industry		Manufacturing activity					Cost of		Value of		Total activity		Total value												
		Production and related workers			Estab-lish-ments No.	Number	Man-hours paid '000	Wages \$'000	fuel and elec- tric- ity \$'000	Cost of materials and suppliers used \$'000	Value of shipments of goods of own manu- facture \$'000	Value added \$'000	Total employees Number	Salaries and wages \$'000	Total value added \$'000										
1977																									
1	Motor vehicle manufacturers	22	38,636	85,333	657,498	39,904	6,904,745	8,610,375	1,755,660	52,473	945,443	2,266,172													
2	Petroleum refining	39	6,813	14,344	134,898	84,145	7,234,933	8,327,308	1,195,925	16,464	353,981	1,206,718													
3	Pulp and paper mills	145	64,930	135,108	1,130,432	667,543	2,910,868	6,636,532	3,056,481	84,533	1,541,355	3,069,757													
4	Slaughtering and meat processors	430	25,146	52,368	344,640	33,772	3,400,472	4,258,366	835,446	33,322	477,895	867,437													
5	Iron and steel mills	48	84,747	677,594	229,487	1,992,722	3,843,555	1,683,275		52,709	917,892	1,677,648													
6	Motor vehicle parts and accessories manufacturers	236	41,210	90,138	657,585	49,726	2,071,626	3,790,188	1,713,782	49,755	822,985	1,750,311													
7	Sawmills and planing mills	1,132	51,532	107,850	774,805	87,687	1,925,124	3,672,729	1,718,628	60,445	930,247	1,722,880													
8	Dairy products industry	466	14,194	29,552	178,363	45,250	2,328,992	3,082,715	726,752	26,550	352,518	787,946													
9	Miscellaneous machinery and equipment manufacturers	879	39,165	81,266	509,778	25,316	1,321,403	2,696,211	1,365,681	58,882	818,423	1,523,186													
10	Smelting and refining	30	25,217	51,271	375,106	179,016	735,810	2,053,062	1,138,236	35,647	580,691	1,176,050													
11	Miscellaneous food processors	243	12,296	25,721	146,201	30,048	1,216,571	1,997,264	753,656	21,236	285,939	843,790													
12	Metal stamping and pressing industry	541	20,308	42,999	257,389	15,873	1,007,806	1,763,457	746,401	26,133	362,466	772,188													
13	Commercial printing	1,908	31,446	62,380	397,338	12,044	668,616	1,585,183	915,656	42,498	575,781	932,299													
14	Communications equipment manufacturers	250	21,929	45,392	262,859	8,420	495,021	1,441,330	937,761	36,676	516,261	1,013,449													
15	Manufacturers of industrial chemicals (organic)	38	6,159	13,304	110,311	142,786	834,177	1,391,123	451,186	11,796	232,979	521,190													
16	Feed industry	553	5,339	11,308	62,866	17,246	1,089,168	1,366,745	263,960	8,915	109,399	295,886													
17	Rubber products industries	109	19,469	40,466	242,918	30,369	650,411	1,306,435	678,271	28,507	379,707	747,570													
18	Plastics fabricating industry	646	22,274	45,172	220,632	23,810	648,868	1,225,925	564,396	27,192	302,135	576,108													
19	Publishing and printing	557	16,200	31,898	225,551	8,857		1,213,521	880,651	33,026	465,683	877,321													
20	Manufacturers of electrical industrial equipment	198	17,630	36,700	212,338	10,654	463,881	1,081,136	627,739	28,463	393,398	698,799													
21	Men's clothing factories	454	30,638	62,143	251,637	4,029	541,635	1,041,103	497,847	55,130	324,309	509,595													
22	Miscellaneous metal fabricating industries	509	17,871	37,224	208,441	16,152	503,490	1,033,119	520,454	23,298	294,972	535,854													
23	Manufacturers of industrial chemicals (inorganic)	87	6,456	14,183	117,338	172,447	423,400	1,021,514	422,875	10,369	197,636	458,039													
24	Fish products industry	310	18,801	40,308	186,902	16,671	595,036	965,824	364,655	21,937	228,857	425,671													
25	Women's clothing factories	529	25,946	50,005	207,713	2,744	517,239	958,397	441,998	29,544	269,168	491,081													
26	Fruit and vegetable canners and preservers	190	16,819	34,460	171,688	12,438	537,626	892,611	358,905	13,550	152,945	388,607													
27	Bakeries	1,343	16,311	33,493	181,591	19,843	383,257	870,549	467,513	25,575	300,862	499,835													
28	Agricultural implement industry	140	12,378	24,875	171,559	10,736	503,625	841,208	336,595	16,064	238,944	377,634													
29	Agricultural chemical industries	304	8,524	17,114	98,590	15,701	452,774	838,976	371,672	14,948	216,164	409,800													
30	Miscellaneous structural metal industry	157	12,334	27,011	208,061	8,768	358,181	818,291	452,040	17,209	285,623	483,523													
31	Breweries	41	7,262	15,192	124,942	16,981	250,543	815,586	347,494	12,112	216,875	557,239													
32	Miscellaneous paper converters	207	10,230	21,030	115,196	10,242	425,836	792,819	359,944	14,553	187,172	370,332													
33	Soft drink manufacturers	263	6,429	13,780	79,840	12,221	382,048	775,038	381,617	14,548	202,281	437,989													
34	Wire and wire products manufacturers	242	10,405	21,786	125,016	10,862	430,970	759,665	322,544	13,147	170,925	330,654													
35	Household furniture manufacturers	639	20,363	43,539	194,500	8,600	357,105	739,439	393,724	23,901	247,238	393,494													
36	Manufacturers of pharmaceuticals and medicines	127	6,594	13,107	75,430	7,944	280,655	758,414	485,825	14,231	203,162	534,536													
37	Aircraft and aircraft parts manufacturers	101	14,257	30,969	191,215	9,086	302,143	738,241	404,825	22,382	328,278	520,957													
38	Tool and die manufacturers	14	5,300	9,516	80,291	3,908	315,663	715,106	402,085	8,095	129,530	403,707													
39	Poultry processors	85	8,113	16,866	83,168	7,684	518,334	680,063	153,045	9,406	101,391	157,716													
40	Manufacturers of electric wire and cable	38	6,423	13,722	88,649	8,652	442,179	678,054	236,406	8,958	132,293	236,330													

18.13 Summary statistics of manufactures, by province, 1976-78

Year, province or territory	Estab-lish-ments No	Manufacturing activity			Cost of fuel and electricity \$ '000	Cost of materials and supplies used \$ '000	Value of shipments of goods or own manu-facture \$ '000	Value added \$ '000	Total activity	
		Production and related workers	Man-hours paid '000	Wages \$ '000					Total employees Number	Total value added \$ '000
1976										
Newfoundland	249	11,388	24,274	125,360	30,486	302,471	599,084	243,297	14,250	164,453
Prince Edward Island	106	1,657	3,560	14,262	2,336	76,883	116,152	37,173	2,138	19,481
Nova Scotia	649	26,841	55,673	271,892	86,447	1,227,539	1,987,456	679,120	36,290	402,287
New Brunswick	527	23,325	49,342	247,913	95,531	1,188,606	1,864,343	585,465	30,303	340,728
Quebec	9,020	386,985	799,113	3,947,918	612,927	14,763,005	25,802,937	10,664,392	524,632	627,530
Ontario	11,880	617,479	1,290,735	7,270,230	1,066,588	28,818,531	49,851,277	20,410,677	853,812	11,223,347
Manitoba	1,171	40,399	82,777	401,193	64,754	1,633,712	2,766,058	1,098,088	54,306	601,568
Saskatchewan	612	13,671	28,288	160,712	29,850	754,522	1,213,350	446,399	18,694	231,643
Alberta	1,790	48,174	100,176	592,661	91,610	3,435,525	5,208,207	1,744,554	67,367	870,206
British Columbia	3,025	106,647	215,828	1,572,791	244,388	4,773,089	8,857,458	4,007,010	140,975	2,172,894
Yukon and Northwest Territories	24	227	476	2,378	307	8,534	14,455	5,734	280	3,152
Canada	29,053	1,276,693	2,650,230	14,607,394	2,325,264	56,982,416	98,280,777	39,921,910	1,743,047	21,799,733
1977										
Newfoundland	232	12,243	26,598	146,168	29,497	341,143	697,466	343,672	14,904	184,156
Prince Edward Island	104	1,756	3,792	16,263	2,902	84,676	130,374	42,016	2,251	21,071
Nova Scotia	630	25,472	53,710	285,149	100,730	1,410,038	2,201,480	735,178	34,291	412,071
New Brunswick	495	23,071	48,756	272,844	118,358	1,288,143	2,040,500	641,547	29,722	318,233
Quebec	8,476	367,207	759,645	4,194,585	714,512	15,789,664	28,010,254	11,781,670	500,098	6,356,044
Ontario	11,414	605,796	1,262,248	7,899,419	1,310,664	32,268,628	55,585,504	22,534,543	843,378	12,395,288
Manitoba	1,125	37,150	75,770	419,072	72,709	1,652,706	2,816,856	1,107,654	51,381	677,749
Saskatchewan	592	13,612	28,342	179,666	37,296	805,621	1,299,498	469,980	18,648	258,356
Alberta	1,731	47,114	99,205	641,839	115,195	4,009,973	6,026,283	1,942,647	67,634	968,432
British Columbia	2,899	107,937	219,061	1,757,800	288,004	5,356,748	10,058,453	4,498,873	142,089	2,024,053
Yukon and Northwest Territories	18	145	300	1,861	485	8,070	15,289	6,765	184	2,540
Canada	27,716	1,242,103	2,577,428	15,814,667	2,790,351	63,015,412	108,881,958	44,104,548	1,704,583	23,595,238
1978										
Newfoundland	269	13,299	28,471	171,050	37,730	422,484	840,982	386,419	16,127	214,045
Prince Edward Island	130	2,228	4,747	22,189	3,523	114,832	219,451	38,038	2,781	29,742
Nova Scotia	714	27,370	57,910	326,492	137,669	1,662,016	2,719,913	896,498	36,219	468,636
New Brunswick	579	24,509	50,393	304,393	138,353	1,560,270	2,434,817	738,116	31,269	361,438
Quebec	9,701	386,741	800,572	4,816,659	896,798	13,763,459	23,972,827	13,995,539	523,529	7,194,798
Ontario	13,079	633,499	1,322,642	8,830,705	1,536,347	38,110,181	63,272,837	25,910,549	880,806	14,633,193
Manitoba	1,263	38,895	78,893	458,730	88,951	1,935,564	3,277,879	1,266,865	53,358	688,164
Saskatchewan	676	14,112	29,537	196,676	44,861	906,332	1,513,768	348,468	19,215	282,720
Alberta	2,050	51,855	107,529	754,633	172,302	4,862,215	7,426,768	2,437,438	73,669	1,135,768
British Columbia	3,478	117,798	238,748	2,049,064	340,088	6,540,186	12,225,848	5,435,565	153,616	2,777,997
Yukon and Northwest Territories	24	218	459	2,779	619	12,518	20,551	7,770	262	3,635
Canada	31,963 ¹	1,310,524	2,721,381	17,933,370	3,397,240	74,894,056	129,019,220	51,679,262	1,790,849	26,577,136
										54,634,611

¹Establishment and working owner and partner counts for 1978 show substantial increases because of improved coverage of small establishments.

18.14 Summary statistics of manufacturers, by census metropolitan area, 1976 and 1977

Census metropolitan area	Estab-lish-ments No.	Manufacturing activity			Cost of fuel and electricity \$/(\$/000)	Cost of materials and supplies used \$/(\$/000)	Value of shipments of goods of own manu- facture \$/(\$/000)	Value added \$/(\$/000)	Total activity -		Total value added \$/(\$/000)
		Production and related workers	Man- hours paid \$/(\$/000)	Wages \$/(\$/000)					Number	Salaries and wages \$/(\$/000)	
1976											
Calgary, Alta.	544	14,657	30,323	178,921	15,038	851,263	1,367,302	519,361	19,594	254,272	534,241
Chicoutimi-Jonquière, Que.	76	5,758	10,422	69,492	13,340	356,412	203,041	141,450	8,703	114,095	159,218
Edmonton, Alta.	627	19,130	39,823	232,448	42,448	1,602,839	2,354,938	730,034	26,012	337,322	763,627
Halifax, NS	134	17,940	33,602	189,041	6,989	482,370	331,064	189,041	7,097	83,766	191,322
Hamilton, Ont.	627	32,908	108,939	692,096	115,853	4,303,790	4,303,790	1,817,921	65,768	920,069	1,861,683
Kitchener, Ont.	336	38,908	80,977	418,964	29,555	2,389,086	2,271,311	1,046,246	49,418	568,380	1,080,891
London, Ont.	318	38,908	80,977	418,964	12,129	1,205,628	1,083,271	548,779	21,485	266,281	612,387
Montreal, Que.	4,953	20,925	423,085	2,069,428	174,535	8,356,398	14,346,054	5,590,037	271,533	3,063,269	6,189,489
Ottawa-Hull, Ont., Que.	335	13,173	27,006	148,958	29,624	411,624	842,706	450,023	19,208	240,859	432,302
Quebec, Que.	473	16,021	32,905	168,933	24,403	719,456	1,233,922	529,982	20,326	229,144	539,856
Regina, Sask.	116	5,715	9,295	57,749	8,721	231,248	380,530	148,574	5,977	77,541	160,161
Saint John, NB	351	29,666	62,341	419,726	78,160	633,841	820,468	196,266	7,263	94,159	205,539
St. Catharines-Niagara, Ont.	77	21,224	4,527	23,207	2,918	65,062	137,123	69,014	3,007	34,372	74,847
Saskatoon, Sask.	139	3,870	8,004	41,962	4,277	244,483	369,465	122,748	5,098	58,638	128,590
Sudbury, Ont.	97	6,493	12,905	81,538	49,035	60,507	427,380	195,917	9,411	137,127	198,742
Thunder Bay, Ont.	97	6,083	16,649	74,395	30,431	190,965	427,380	209,461	7,676	98,195	212,018
Toronto, Ont.	5,698	236,781	492,055	2,627,643	208,670	10,491,115	18,293,118	7,697,880	322,452	3,928,623	8,235,202
Vancouver, BC	1,781	50,554	102,803	689,775	54,842	2,372,970	4,034,941	1,675,335	66,170	943,020	1,737,674
Victoria, BC	183	4,205	8,453	58,606	2,629	118,944	244,615	125,580	5,314	128,730	179,730
Windsor, Ont.	357	27,777	61,374	407,752	25,940	2,293,755	3,457,451	1,181,881	33,649	520,256	1,194,973
Winnipeg, Man.	881	32,781	67,147	329,882	32,883	1,299,120	2,191,598	882,580	42,631	461,727	932,713
1977											
Calgary, Alta.	521	14,864	30,643	200,403	19,443	972,593	1,550,687	569,089	20,043	284,110	596,395
Chicoutimi-Jonquière, Que.	73	7,534	16,038	115,065	26,981	379,162	721,712	319,154	10,662	171,664	339,386
Edmonton, Alta.	608	19,413	40,154	261,279	50,305	1,893,448	2,764,179	833,227	26,634	381,949	871,985
Halifax, NS	130	4,633	9,664	55,256	7,737	521,706	724,471	202,128	6,619	84,367	204,468
Hamilton, Ont.	601	50,857	106,024	737,359	148,897	2,565,616	4,633,969	2,009,689	64,243	978,233	2,045,604
Kitchener, Ont.	522	37,450	78,232	451,777	35,832	1,264,373	2,431,996	1,143,462	47,668	609,434	1,175,201
London, Ont.	309	30,766	30,766	149,102	14,329	543,860	1,095,069	534,748	20,744	286,697	606,383
Montreal, Que.	4,886	191,095	393,158	2,150,089	197,189	8,669,966	15,038,650	6,337,191	254,735	3,200,471	6,607,116
Ottawa-Hull, Ont., Que.	313	11,947	24,981	154,336	34,200	479,379	957,082	452,982	17,792	250,381	473,816
Quebec, Que.	437	16,082	32,754	186,864	27,320	856,397	1,443,659	604,778	20,341	249,844	616,883
Regina, Sask.	130	4,560	9,787	64,977	11,203	265,523	445,129	171,195	6,082	90,364	179,067
Saint John, NB	67	5,850	12,208	86,462	33,261	698,011	945,187	223,896	7,172	107,528	226,926
St. Catharines-Niagara, Ont.	342	29,797	65,524	473,760	98,705	1,312,296	2,567,726	1,171,736	37,284	612,473	1,192,345
Saskatoon, Sask.	137	2,114	4,568	25,791	3,138	76,544	154,125	74,666	3,011	38,012	78,863
Sudbury, Ont.	93	3,941	8,012	47,575	5,696	246,355	374,570	123,015	5,227	66,897	128,796
Thunder Bay, Ont.	60	6,424	12,753	86,422	51,657	73,558	320,619	195,540	9,063	138,552	205,298
Toronto, Ont.	5,468	227,387	473,777	2,755,485	41,994	307,277	625,867	277,849	8,020	122,675	280,344
Vancouver, BC	1,711	50,806	103,879	779,707	70,543	11,706,084	19,941,933	8,197,657	313,066	4,165,450	8,636,924
Victoria, BC	168	3,817	7,642	38,358	2,818	114,821	4,699,175	1,923,668	66,277	1,053,970	2,003,076
Windsor, Ont.	343	30,514	65,388	479,657	34,566	2,520,924	3,915,546	1,387,342	36,443	609,371	1,398,321
Winnipeg, Man.	799	29,877	61,035	331,498	37,985	1,301,550	2,197,652	871,888	40,184	479,286	933,186

18.15 Percentages of value of shipments of goods of own manufacture accounted for by the four leading enterprises in the 40 leading industries of Canada, ranked by 1976 shipments

Industry	Estab- lish- ments No.	Enter- prises No.	Value of shipments of goods of own manufacture \$ '000,000	Percentage of shipments accounted for by the four leading enterprises			
				1970	1972	1974	1976 ¹
Motor vehicle manufacturers	23	15	7,276.1	93.3	¹	90.1	93.4
Petroleum refining	39	16	6,725.2	79.0	73.7	67.8	68.1
Pulp and paper mills	147	64	5,992.7	36.2	34.5	34.0	33.0
Slaughtering and meat processors	467	409	3,990.0	54.8	54.0	50.2	49.5
Iron and steel mills	46	33	3,460.1	76.2	77.8	76.8	81.5
Motor vehicle parts and accessories	238	191	3,112.3	46.2	48.9	46.2	50.5
Sawmills and planing mills	1,213	1,085	2,878.3	20.9	18.2	18.8	19.4
Dairy products industry	491	315	2,811.2	29.2	33.0	37.3	37.3
Miscellaneous machinery and equipment manufacturers	877	817	2,418.7	16.1	12.5	12.7	11.0
Miscellaneous food processors, n.e.s.	251	198	1,708.7	33.7	35.2	39.5	37.8
Metal stamping and pressing industry	544	487	1,560.5	39.0	39.5	37.0	37.0
Commercial printing	1,978	1,898	1,465.0	17.1	19.5	20.9	21.1
Smelting and refining	28	13	1,443.3	79.0	78.7	75.0	71.2
Communications equipment manufacturers	261	222	1,383.2	55.8	56.5	60.8	63.9
Feed industry	608	489	1,292.5	29.4	29.1	27.4	27.2
Rubber products industry	115	93	1,212.2		60.7	51.4	57.3
Industrial chemicals (organic), n.e.s.	35	25	1,180.7	60.5	59.9	61.6	61.0
Publishing and printing	574	486	1,147.9	37.6	42.5	48.7	48.2
Plastics fabricating industry, n.e.s.	661	588	1,101.6	16.2	13.3	11.3	11.1
Manufacturers of electrical industrial equipment	200	139	1,019.1	55.6	51.1	50.7	51.4
Men's clothing factories	485	441	1,015.6	12.0	11.7	12.7	14.0
Miscellaneous metal fabricating industries	524	500	994.6	14.6	15.1	13.4	13.7
Women's clothing factories	566	525	913.5	8.0	8.2	7.5	7.3
Industrial chemicals (inorganic), n.e.s.	89	36	908.3	52.5	52.4	44.7	46.3
Agricultural implement industry	148	144	853.1	70.6	65.3	¹	65.1
Fabricated structural metal industry	159	141	840.5	44.0	38.0	44.0	41.8
Fruit and vegetable canners and preservers	204	151	833.0	41.7	39.8	37.3	39.3
Bakeries	1,478	1,417	832.6	31.6	33.5	37.0	31.9
Miscellaneous chemical industries, n.e.s.	311	242	798.6	36.4	32.3	33.2	32.2
Miscellaneous paper converters	215	165	778.0	33.3	33.5	34.2	34.0
Household furniture manufacturers, n.e.s.	653	619	770.1	13.1	13.4	15.4	17.0
Soft drink manufacturers	272	220	751.4	46.0	46.2	50.4	50.7
Fish products industry	319	231	742.0	39.2	42.5	44.5	49.0
Breweries	42	6	736.1	94.0	96.6	¹	¹
Aircraft and aircraft parts manufacturers	103	96	723.2	72.0	¹	¹	¹
Manufacturers of pharmaceuticals and medicines	132	118	698.8	29.6	27.8	25.6	27.5
Wire and wire products manufacturers, n.e.s.	245	215	691.8	96.9	97.2	97.7	38.7
Tobacco products manufacturers	15	10	656.8				¹
Manufacturers of electric wire and cable	37	16	648.7	83.0	79.2	80.2	80.5
Ready-mix concrete manufacturers	348	230	633.5	40.2	51.1	48.4	48.2

¹Confidential.

18.16 Capacity utilization rates, by quarter, 1961-79

Year		Durable goods	Non-durable goods	Manufacturing industries	Year	Durable goods	Non-durable goods	Manufacturing industries
1961	1st quarter	64.9	81.7	73.3	1970	1st quarter	85.5	87.5
	2nd "	66.9	82.2	74.5		2nd "	81.8	85.8
	3rd "	68.1	83.8	76.0		3rd "	80.3	84.5
	4th "	69.9	84.4	77.1		4th "	76.7	81.1
1962	1st quarter	70.9	84.8	77.8	1971	1st quarter	79.1	84.2
	2nd "	73.8	85.7	79.7		2nd "	81.4	83.3
	3rd "	75.1	85.9	80.5		3rd "	84.3	85.7
	4th "	75.8	84.9	80.3		4th "	84.4	85.8
1963	1st quarter	76.2	85.3	80.8	1972	1st quarter	83.3	86.6
	2nd "	77.4	86.5	81.9		2nd "	83.9	88.9
	3rd "	77.4	86.6	82.0		3rd "	84.7	86.4
	4th "	81.2	87.3	84.2		4th "	87.2	88.9
1964	1st quarter	83.6	88.9	86.2	1973	1st quarter	91.2	91.1
	2nd "	83.4	88.7	86.2		2nd "	90.1	90.8
	3rd "	83.8	88.7	86.3		3rd "	89.7	89.6
	4th "	85.3	89.7	87.5		4th "	91.4	91.6
1965	1st quarter	88.1	88.7	88.4	1974	1st quarter	93.5	92.6
	2nd "	89.5	88.1	88.8		2nd "	91.1	90.8
	3rd "	89.0	89.2	89.1		3rd "	88.3	88.7
	4th "	92.6	90.1	91.3		4th "	86.0	85.9
1966	1st quarter	92.8	90.6	91.7	1975	1st quarter	79.7	83.3
	2nd "	90.7	90.0	90.4		2nd "	79.5	82.6
	3rd "	88.5	88.9	88.7		3rd "	80.8	81.7
	4th "	88.9	88.5	88.7		4th "	81.4	80.9
1967	1st quarter	86.9	87.6	87.3	1976	1st quarter	81.3	83.2
	2nd "	85.5	87.1	86.3		2nd "	82.5	85.2
	3rd "	85.2	87.6	86.4		3rd "	80.7	84.2
	4th "	84.6	86.5	85.6		4th "	79.5	83.3
1968	1st quarter	82.2	86.9	84.5	1977	1st quarter	81.1	84.7
	2nd "	85.9	87.0	86.5		2nd "	81.2	84.2
	3rd "	87.7	85.7	86.7		3rd "	81.2	83.9
	4th "	89.2	87.8	88.5		4th "	81.8	84.6
1969	1st quarter	89.8	88.8	89.3	1978	1st quarter	80.6	87.0
	2nd "	89.8	88.6	89.2		2nd "	83.8	85.9
	3rd "	88.0	89.2	88.6		3rd "	85.0	87.3
	4th "	86.4	88.0	87.2		4th "	86.8	88.8
					1979	1st quarter	87.5	89.6

Sources
18.1 - 18.16 Manufacturing and Primary Industries Division, Economic Statistics Field, Statistics Canada.

Merchandising and trade

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Distribution of goods and services from producer to consumer, principally through wholesale and retail businesses in Canada's marketing process and through the channels of international trade, can be measured to show trends in vital aspects of Canada's economy. The federal departments of consumer and corporate affairs and industry, trade and commerce, the Export Development Corporation and Statistics Canada all play their part in these processes.

Merchandising and service trades

19.1

Merchandising industries include wholesaling and warehousing which exist in a variety of forms: wholesale merchants, agents and brokers, primary products dealers, manufacturers sales branches, petroleum bulk tank plants and truck distributors. Retailing encompasses all sales activities related to transmitting goods to consumers for household or personal use, both through traditional store locations and such facilities as direct selling and machine vending.

Statistics on merchandising and service industries are gathered by Statistics Canada through periodic business censuses as well as monthly, annual and occasional surveys. In recent years, considerable interest has been focused on the service trades, resulting in expanded statistical coverage.

Retail trade

19.1.1

Retail trade statistics are collected by Statistics Canada from monthly surveys of all retail chains (four or more stores in the same kind of business under one owner), and of a sample of independent retailers.

Table 19.1 shows retail trade sales by kind of business and province from 1975 to 1978, the percentage change in sales and their percentage distribution in 1978. Over a decade retail sales grew at an average annual rate of 10.4% from \$25.7 billion in 1968 to \$68.9 billion in 1978. During the first three years of this period and again in 1977 retail sales expanded at annual rates below 10.4% but in the other six years they increased at annual rates above this average, particularly in 1974 when they rose by 16.3% and in 1975 by 14.9%.

Retail sales through food stores, department stores, and stores related to automobile purchases accounted for almost the same proportion of all retail sales in 1978, two-thirds, as they did in 1968, when the earlier series are adjusted for closer comparability by omitting fuel dealer sales and adjusting department store sales. Provincially, over this same period, sales in the Atlantic region held at the same percentage of total sales, a little over 8%, but the increase in sales in the western region from 27.7% in 1968 to 30.4% in 1978 has been at the expense of the central provinces, confirming an overall shift in the population westward.

Chain and independent stores. A retail chain is an organization operating four or more retail stores in the same kind of business under the same legal ownership. All department stores are classified as chains even if they do not meet this definition. An independent retailer is one who operates one to three stores, even if he is a member of a voluntary group organization.

Table 19.2 provides data on the retail sales of chain and independent stores by kind of business in 1977 and 1978 with percentage changes over the year. Chain stores play a dominant role in retailing by particular groups of stores such as combination (groceries and meat) stores, department, general merchandise and variety stores. The independent type of store tends to predominate in other kinds of business such as grocery, confectionery and sundries stores, general stores, motor vehicle dealers, service

stations, automotive parts and accessories, hardware stores, the household furniture, appliances, TV and radio groups of stores, pharmacies, patent medicine and cosmetics stores, florists, and sporting goods and accessories stores.

Table 19.3 shows the percentage market share of retail trade held by chain store organizations since 1972, the earliest year appropriate for the current series of retail trade statistics. This table confirms the predominance of certain types of store organizations in retailing by particular groups of stores. It indicates, over six years, a shift toward an increasing proportion of sales by chain organizations in certain kinds of business such as general stores, service stations, men's clothing stores, family shoe stores, book and stationery stores, and jewellery stores.

Department stores. Table 19.4 shows data on department stores, by departments, for recent years. In 1930 there were from 20 to 25 retail organizations classified to the department store category. By 1971 the number had grown to 40 with sales of \$3,194 million, or 10.2% of total retail store activity. By 1978 the rate of concentration had accelerated, with the number of department store organizations shrinking to 29 firms due to amalgamations or closures, but sales maintained growth, increasing 10.9% over 1977 to \$7,695 million or 11.2% of total retail store activity. The sales values shown in the table do not include mail-order sales nor the sales of non-department store retail outlets which are also owned or operated by these organizations.

The varying degrees of urbanization, access to department store outlets, and levels of disposable income in different parts of Canada have a marked effect on the relative importance of department store sales in retailing in these areas. Department store sales in the Atlantic provinces (except Prince Edward Island), Quebec and Saskatchewan account for around 8.0% of total retail sales, indicating a less important role in these areas than in Prince Edward Island, Manitoba, Alberta and British Columbia where they account for almost double this percentage. In Ontario, where both retail sales and department store sales are around 37.0% of national sales, department store sales account for 11.3% of total retailing, close to the national average.

Over the years there has been a distinct shift in the commodity lines sold by department stores. There used to be a heavy reliance on a limited number of commodity groups such as apparel and household goods. Now the emphasis is on an extremely broad assortment of goods and services including newer types of commodities, such as television sets, microwave ovens and tape recorders. Three major groupings, apparel, dry goods and home furnishings, formerly accounted for almost two-thirds of total sales; now they amount to just over one-half. Household appliances, household furniture, television sets, radio and record players, hardware, building supplies and housewares have more than doubled in aggregate sales. Among other commodity groups whose sales have risen noticeably are auto parts and accessories, drugs and drug sundries, toilet articles and cosmetics.

New motor vehicle sales. Statistics Canada obtains monthly new motor vehicle sales figures from both Canadian manufacturers and importers. They supply both unit and dollar sales. Users of the unit data, however, should be aware that they differ from data available from other sources, such as factory shipments and registrations, owing to variations in definition and treatment of new vehicles in relation to demonstrators, sales to the Canadian forces, semi-finished imports and sales of motors and chassis to coach body-builders.

The new motor vehicles referred to are passenger cars, trucks and buses sold by motor vehicle dealers. Excluded are all export sales and domestic sales of motorcycles, snowmobiles and other all-terrain vehicles. Passenger cars include not only private cars but taxis and car rental fleets and other passenger cars used for business and commercial purposes; commercial vehicles refer solely to trucks and buses. Vehicles manufactured overseas include only those imported (some by Canadian and US manufacturers) in a fully assembled state from countries other than the United States. When assembled on this continent some well-known foreign makes of cars and trucks are treated statistically as being Canadian- and US-made vehicles.

Over the decade 1958-68 sales of new motor vehicle units in Canada doubled from 444,769 to 889,453 units. They expanded a further 50% over the following decade, to

1,366,544 units by the end of 1978. During the first half of the 20-year period, sales of both passenger cars and commercial vehicles kept in step, the latter accounting for around a stable 15% of total units sold. Over the next decade, sales of commercial vehicles rose at a much faster rate, increasing an aggregate 156% by 1978, compared with a 33% increase for passenger cars to 27% of total units sold. Passenger cars manufactured in Canada and the United States have usually supplied the bulk of the domestic car market. Imported cars accounted for between a tenth to a quarter of these

In 20 years the annual sale of motor vehicles in Canada more than tripled, from nearly 450,000 units in 1958 to nearly 1.37 million in 1978. The proportion of imported vehicles sold ranged between 15% and 24% of the domestic passenger car market during the 1970s.

vehicles at different times over the 20 years. In the late 1950s and early 1960s imported cars ranged between 20% and 28% of domestic car sales, with European, including British vehicles, claiming the major share of these sales. During the 1970s the imported component accounted for between 15% and 24% of a much larger domestic passenger car market, and the advantage had swung to imports from Japan. More recently the deterioration in the exchange rate of the Canadian dollar has considerably reduced the price advantage of imported passenger cars in the domestic car market.

Campus bookstores. Retail trade statistics are collected annually from more than 200 bookstores located on the campuses of universities and other post-secondary educational institutions. Owing to their location and the highly seasonal nature of their business, campus bookstores are not included in the census of merchandising and services, nor are they included in the monthly estimates of retail trade. Since they are not considered retail outlets, a separate survey is conducted to provide data. In the 1977-78 academic year, as shown in Table 19.7, 212 campus bookstores registered net sales of \$92.7 million, a 13.1% increase over the previous year. Of the total dollar sales, 62.6% was accounted for by textbooks, 12.6% by trade books, 15.9% by stationery and supplies and 8.9% by sales of miscellaneous items.

Non-store retailing. Consumer goods, in addition to being sold in retail stores, often reach the household consumer through other channels. These channels bypass the retail outlet completely in moving from primary producer, manufacturer, importer, as wholesaler or specialized direct seller, to the household consumer. Statistics Canada conducts annual surveys of two distinct forms of non-store retailing: merchandise sales through vending machines and sales by manufacturers and distributors specializing in direct-sales methods such as catalogue and mail-order sales, door-to-door canvassing, and house parties.

Vending machine sales. This survey is designed to measure the value of merchandise sales made through automatic vending machines owned and operated by independent operators and subsidiaries or divisions of manufacturers and wholesalers of vending products. Excluded from coverage are the sales through many thousands of vending machines (carrying such commodities as cigarettes, beverages, confectionery) which are owned and operated by retail stores, restaurants and service stations; these sales statistics are usually inextricable from data collected in the course of other surveys.

Table 19.8 shows the annual sales of the maximum number of vending machines, excluding ovens, and coin and bill changers, along with the number of firms active as vending machine operators for the years 1970-77. Table 19.9 shows dollar sales through 16 selected types of vending machines, percentage distribution of these sales, and percentage changes for the years 1976 and 1977. The 105,551 vending machines in operation at year-end 1977, slightly less than the maximum shown in Table 19.8, were placed in a variety of locations. The most favoured was industrial plants, in which 35.4% were situated; next in popularity was hotels, motels, taverns and restaurants in which

23.7% were located; followed by institutional locations, including hospitals, schools and universities with 14.7%. Business offices accommodated 9.3% of all machines. The small bulk confectionery dispensing machines, which have been omitted from the percentage distribution shown for locations, are by far the most numerous in other retail and services locations as well as in service stations and garages.

Direct selling refers to the substantial volume of consumer goods sold to the household consumer for his personal use by other than the regular retail store outlet, department store, chain store or independent retail dealer. This occurs at all levels in the movement of goods from the primary producer or importer to the consumer: at the agricultural level by greenhouse and nursery operators and some market gardeners; at the manufacturing stage through sales exclusively to employees at company-operated on-premise stores, or through integrated sales divisions using mail-order or door-to-door canvassers; by some wholesalers and importers; and by specialized direct sellers.

Tables 19.10 and 19.11 cover only direct sales by some primary producers (greenhouses and nurseries), wholesalers, manufacturers, and specialized direct sellers. They do not include foreign mail-order sales to Canadians nor the mail-order sales by department stores in Canada.

Home deliveries of bread, milk and dairy products still form the largest component of direct sales to the household consumer. Other expenditures at home, from traditional door-to-door canvassers or at house-party sales, were on vacuum cleaners; dinnerware, kitchenware and utensils; household cleaners, soaps, brushes, brooms and mops; and books. Mail-order purchases by consumers are chiefly for books, newspapers and magazines, as well as a wide range of general merchandise, such as household appliances, books, binoculars, cameras, jewellery, watches and radios offered to credit-card holders of gasoline oil companies and other card issuers. Direct purchases from showrooms and premises of manufacturers include frozen food plans, fur goods, aluminum doors, windows, screens and awnings, furniture repair and re-upholstering and sailboats and pleasure craft. Consumers also purchase greenhouse flowers, fruit and vegetables for temporary roadside stands and market stalls; meals and alcoholic beverages on airlines, ferries and railways; and other miscellaneous commodities at exhibitions and shows.

19.1.2 Sales financing and consumer credit

Sales financing. Ancillary to the retailing industry are the financial institutions which facilitate consumer instalment purchases, particularly of the more expensive consumer durables such as automobiles and household appliances. Separate statistics have for many years been maintained by Statistics Canada on the retail instalment financing undertaken by the sales finance industry, especially their participation in the financing of automobile purchases. The firms in this industry include independent sales finance companies, the sales finance company subsidiaries of car, truck and farm implement manufacturers, and the sales financing business of consumer loan companies.

Not reported in these statistics are the instalment sales financing done by acceptance companies which are the subsidiaries of, or which are associated exclusively with, large retailing organizations. The sales financing activity of these companies is regarded as an extension of the merchandising function, and their statistics are included with the accounts receivable reported by department stores and other retail merchandising establishments. At year-end 1977 about a dozen such acceptance companies reported accounts receivable of \$1,479.2 million for purchases of consumer goods through their associated retail outlets.

By year-end 1978 the sales finance industry, as delineated above, held outstanding balances of \$3,902 million covering the retail instalment financing of both consumer goods (\$1,177 million) and commercial and industrial goods (\$2,725 million) (Table 19.12). During the course of the year, the industry augmented its purchases of new finance paper by \$3,442 million, \$1,212 million of consumer goods paper and \$2,230 million of commercial and industrial finance paper.

Since 1970 the composition of the portfolios of sales finance companies has shifted from a preponderance of consumer goods paper to an emphasis on commercial and

industrial goods financing. The latter class of paper now comprises 69.8% of all paper whereas in 1970 it amounted to 49.5%. The financing of passenger car sales still plays a significant role in the activity of sales finance companies. At year-end 1978 these companies held balances of \$1,471 million for this class of finance paper (including balances on new passenger cars acquired for business use such as taxis and commercial fleets) amounting to 37.7% of their total holdings. In Table 19.12 these business purpose passenger cars are shown as commercial vehicles. The chartered banks have also increased their participation in passenger car financing over the years and now hold balances of \$5,741 million.

Consumer credit. Estimates of total consumer indebtedness for 1978 and selected earlier years are shown in Table 19.13. These estimates are based on the outstanding balances recorded in the books of various financial institutions, retail merchandising establishments, public utilities and other credit-granting organizations. The consumer credit extended to individuals and families for non-commercial purposes can be in the form of cash advances, or the provision of goods and services on credit or through use of credit cards, and is generally repaid by regular instalments which include interest and other finance charges. Statistics on consumer indebtedness exclude fully-secured bank loans, home-improvement loans, and long-term indebtedness such as residential mortgages. Data are not available on certain other forms of consumer credit such as interpersonal loans, bills owed to dentists and other professional practitioners, and to clubs or other personal service establishments. A survey of families and unattached individuals, *The distribution of income and wealth in Canada, 1977* (Statistics Canada Catalogue 13-570), showed that consumer debt accounted for 22% of all personal indebtedness, residential mortgages accounted for another 72%, and other miscellaneous debt accounted for the remaining 6%.

By the end of 1978 the total amount of balances outstanding with the above-mentioned selected holders amounted to \$35,762 million, an expansion of \$4,599 million, up 14.8% over the level reached at the end of 1977. Chartered banks, with outstanding balances of \$21,621 million, held 60.5% of total outstandings. Other major grantors of consumer credit were credit unions and caisses populaires with holdings of \$5,468 million, 15.2% of the total; sales finance and consumer loan companies with holdings of \$2,847 million, 8.0% of the total; and retail merchandising establishments with holdings of \$2,841 million, 7.9% of the total outstanding.

In the present situation in the consumer credit market, the cash-lending institutions — chartered banks, credit unions and caisses populaires, consumer loan companies and life insurance companies' policy loans — account for the overwhelming share (86.3%) of consumers' credit needs. This is in marked contrast to the situation in earlier years when consumer credit requirements were mainly serviced by department stores and other retail establishments and sales financing companies, which arranged and financed instalment credit for household effects and other consumer durables including passenger cars.

Service trades

19.1.3

Service trades generally encompass those businesses, both commercial and non-commercial, which perform a service and in which the sale of goods constitutes only a minor function. Commercial service trades are classified generally into six principal groups: amusement and recreational services (such as movie theatres, bowling alleys, billiard parlours and health clubs); personal services (barber shops, beauty parlours, laundromats, laundry and dry cleaning and shoe repair shops); restaurant services (restaurants, take-out food shops, and other eating and drinking places); miscellaneous services (photographers, automobile and truck rentals and driving schools); services to business (lawyers, accountants, computer services, consultants, advertising agencies and media representatives); and accommodation services (hotels, motels and tourist camps). Non-commercial services include religious institutions, trade and professional associations, fraternal organizations and service clubs. Services related to education, health and finance are not included in this section. Automotive services, such as garages and other repair shops, are covered under retailing.

Traveller accommodation. Table 19.14 summarizes the major types of accommodation services in 1976 and 1977. Total accommodation receipts in 1977 amounted to \$3,306.1 million, of which hotels accounted for the major share, 81.4%, with total receipts of \$2,692.3 million. Receipts reported by motels totalled \$389.2 million (11.8%) and the remaining \$224.6 million (6.8%) was accounted for by tourist homes, tourist courts and cabins, outfitters and tent and trailer campgrounds. Total receipts include such source items as sales of rooms, food, alcoholic beverages, merchandise and other services provided by traveller accommodation business — telephone, valet, laundry and parking. A further breakdown of traveller accommodation data by province is in Table 19.15.

Food and beverage industry. A census-type survey of the food and beverage industry (restaurants, caterers and taverns) was carried out in 1977 duplicating the survey conducted for 1976. Total receipts in 1977 were reported at \$5,953.9 million, an increase of 10.1% over the 1976 (revised) figure of \$5,409.5 million. The survey included establishments primarily engaged in preparing and serving meals and beverages, such as regular restaurants, caterers, drive-in, take-out and industrial restaurants, and taverns. Excluded were establishments owned by and operated as an integral part of hotels, motels and other accommodation businesses; armed forces messes, private clubs, legion branches and eating and drinking places operated by establishments classified to an industrial sector other than the service trades. The provincial distribution of food and beverage receipts for 1976 and 1977 are given in Table 19.16.

Architectural services. A survey to measure architectural services in Canada was conducted for 1977. Published results for 1,283 architect establishments showed gross fees of \$314.5 million and expenses of \$272.7 million.

Motion picture exhibition, distribution and production. This industry consists of exhibitors who operate regular movie theatres and drive-in theatres, film distributors, and private firms and government agencies engaged in producing motion picture films. Data are given in Chapter 17, Cultural activities and leisure.

Advertising agencies. In 1977, 300 advertising agencies reported gross billings of \$1,026.0 million (Table 19.17). This only represents part of the total expenditure on advertising in the country since all advertising is not produced or placed by and through advertising agencies. Among expenditures not generally channelled through advertising agencies are classified advertisements in newspapers and a certain amount of catalogue and direct mail advertising. Of the total gross billings, which include media billings and production charges, \$367.1 million was in print media (including newspapers, weekend roto magazines, consumer magazines, trade papers, yellow pages and farm publications), \$430.7 million in television, \$126.9 million in radio, \$33.9 million for outdoor and transportation, \$31.9 million for direct mail, \$4.5 million for other media, and \$31.1 million for market research studies.

Computer service industry. In 1977 a survey of the computer service industry revealed that 622 companies in Canada provided services involving 584 computers of various capacities, 6,167 terminals and 4,896 access ports. Total operating revenue amounted to \$1,213 million which included \$797 million reported by firms primarily engaged in sales and lease or rental of EDP (electronic data processing) hardware equipment and \$416 million reported by firms primarily engaged in providing computer services.

A further 454 companies in other industry groups also provided computer services as a secondary activity, producing revenues of \$149 million for services provided to manufacturing firms (26%), financial institutions (24%), wholesale, retail and service sectors (34%) and 16% to businesses and institutions in other industry groups.

19.1.4 Wholesale trade

Wholesalers are primarily engaged in buying merchandise for resale to retailers; to industrial, commercial, institutional and professional users; to farmers for farm use; to other wholesalers; or act as agents in connection with such transactions. Businesses engaged in more than one activity, such as wholesaling and retailing or wholesaling and manufacturing, are considered to be primarily in wholesale trade if the greater part of

their gross margin (the difference between the total sales and the cost of goods sold) is due to their wholesaling activity.

Wholesale trade statistics measure the total volume of Canadian wholesale trade, the total volume of trade (domestic and export sales) conducted by all wholesalers operating in Canada, whether they are Canadian-owned or subsidiaries of foreign companies. The total volume of trade measured by Statistics Canada cannot be equated with the value of goods passing through the wholesale sector of the economy because at times wholesale businesses sell to each other and thus the value of the same merchandise may be recorded more than once.

According to certain common characteristics, each wholesale establishment and location (wholesale outlet) is assigned to one of the following types of operation: primary product dealers (grain, livestock, raw furs, fish, leaf tobacco and pulpwood, including co-operative marketing associations); wholesale merchants (buying and selling goods on own account); agents and brokers (buying and selling goods for others on a commission basis); manufacturers sales branches (wholesale businesses owned by manufacturing firms for marketing their own products); or petroleum bulk tank plants and truck distributors (wholesale distribution of petroleum products).

Wholesale merchants account for about 60% of the total wholesale volume of trade and had estimated sales in 1978 of \$62,023 million, up 11.6% from the 1977 volume of \$55,576 million. Industrial goods trades accounted for \$33,725 million of the 1978 total volume of trade while the remaining \$28,298 million was in consumer goods trades. Data for 1976-78 are given in Table 19.18.

Farm implement and equipment sales data are collected annually from manufacturers and importers active in the farm implement and equipment field. Dollar sales are reported at dealers' buying price before the deduction of dealers' cash discounts, value of trade-ins, volume or performance bonuses and export sales are excluded. In 1977 the dollar value of repair parts of \$161.7 million was 4.5% greater than the \$154.7 million reported for 1976.

Farm equipment sales declined by 0.8% to \$1,124.6 in 1977 after attaining a record level of \$1,134.0 million in 1976. The two most important products were farm tractors with a sales volume of \$430.6 million or 38.3% of total sales volume, and harvesting machinery with sales of \$245.2 million or 21.8% of all farm implement and equipment sales in 1977.

Construction machinery and equipment sales include sales by Canadian distributors, direct sales by manufacturers to end-users (at actual final selling price) and revenue derived from renting equipment to users. In 1977 new machinery entering the market (by outright sale, first lease or rental) was valued at \$1,638.4 million, up 4.8% from 1976 (Table 19.20). The sale of used machinery rose by 10.8% from \$241.8 million in 1976 to \$268.0 million in 1977. Rental income increased 22.8% from \$123.5 million to \$151.6 million. Of the \$1,638.4 million, \$619.1 million was accounted for by repair and consumable parts. The largest single item in terms of dollar sales was crawler-type tractors: 2,351 units entered the market for a value totalling \$172.9 million. Sales of new equipment by distributors totalled \$1,505.6 million, while sales by manufacturers amounted to \$132.8 million.

Diesel and natural gas engines sold in Canada in 1977 totalled 20,583. This included 19,581 diesel engines, an increase of 7.6% from the 18,201 sold in 1976 (Table 19.21) and 1,002 natural gas engines. In addition, 20,779 diesel engines were exported or re-exported (compared to 17,523 in 1976); one natural gas engine was exported in 1977.

Co-operatives

The rising level of co-operative business activity in Canada eased somewhat in 1977 along with the general economy. Aggregate dollar volume at \$6.5 billion was up 5% but the inflation rate was about 9.5% and real gross national product expanded at less than 3%. The cost price squeeze was a fact of life for many co-operatives as costs persistently outran prices.

On a component basis service revenue turned in the most impressive performance, up 19% with a major boost from British Columbia and Alberta riding a surge in medical

insurance and electric and gas services. Other income including such items as patronage dividends, rent and interest grew at a 20% rate, a third provided by Quebec associations. Farm and fish product marketing, the major component of overall business volume, eked out a small 2% gain. Supply sales slightly exceeded the inflation rate, rising 10%.

Co-operatives covered here exclude recreational (such as community halls and rinks), financial (credit unions) and those run by native peoples. Those included are classified by their primary function into four main groups: marketing and purchasing (the largest), service, fishermen's and wholesalers. The service group is frequently subdivided into service and production. Production co-operatives provide services directly related to agricultural production such as artificial breeding, or are directly involved in production such as co-operative farming. The first three groups are known as local co-operatives because they deal directly with individual members; the wholesale co-operatives perform wholesaling functions for the locals. Statistics quoted are for the locals since the data for the wholesalers are largely a duplication of figures for the locals.

Total asset value of co-operatives at \$2,657 million for 1977 increased about 2% over 1976. It was another year of strong growth in fixed assets, up about 16%, as co-operatives continued to upgrade and expand their productive capacity. Receivables and investment also rose. But most of these gains were offset by a sharp drop in cash, short-term investments and inventories of the large Western grain co-operatives. Inventories were valued at lower levels in line with world grain prices while the bulk of cash and short-term investments were used to reduce short-term liabilities. Reported membership in co-operatives came to 2.37 million for 1977, about 4% over the adjusted figure for 1976. The number of associations slipped about 1% with only the services group making a gain.

Business volume of marketing and purchasing co-operatives totalled \$6.3 billion in 1977 for a gain of \$302 million or 5% with supply sales accounting for two-thirds of the increase. Farm product marketings rose only 2%. Grain and seeds, accounting for more than half the total marketing, was almost unchanged as lower world prices offset larger export volumes. Fruit and vegetables recorded an overall gain of 8%. Livestock volume dropped 10% as a result of the closure of a major livestock marketing complex. Dairy volume rose \$85 million, with two-thirds of the gain in Quebec where co-operatives have been acquiring additional plant facilities from the private sector in recent years. Poultry and egg marketings rose 5% from increasing broiler meat consumption in Canada. Miscellaneous marketings were pulled down by declines in sales of fur, tobacco and wood. All provinces but Ontario and New Brunswick had higher farm product marketings.

Sales of supplies (farm, consumer and other) by marketing and purchasing co-operatives rose \$215 million or 10% in 1977. Gains were made in all provinces and all sales categories except machinery which declined by 24%, showing the effect of the negative influence of a farm net income decline of 7%. Food products, the largest sales category in the supply sector, registered a substantial gain of \$110 million, or 18%, comfortably ahead of the 15% rise in food prices as measured by the consumer price index. Building materials, the outstanding performer, rose 19% as sales boomed for a second straight year. Gains in the other supply categories ranged from 3% to 14% with inflation accounting for half or more of the increases.

19.1.6 Control and sale of alcoholic beverages

The retail sale of alcoholic beverages in Canada is controlled by provincial and territorial government liquor control authorities. Alcoholic beverages are sold directly by most of these authorities to the consumer or to licensees for resale. However, in some provinces beer and wine are sold directly by breweries and wineries to consumers or to licensees for resale. During the year ended March 31, 1978, provincial government liquor authorities operated 1,632 retail stores and had 401 agencies in smaller centres.

Table 19.24 shows the value and volume of sales of alcoholic beverages in the years ended March 31, 1977 and 1978. The value does not always represent the final retail selling price of alcoholic beverages to the consumer because in some cases only the selling price to licensees is known. Volume of sales is a more realistic indicator of trends in consumption, but as a measure of personal consumption by Canadians it is subject to

the same limitations as value sales and includes, in addition, purchases by non-residents.

Government revenue specifically related to alcoholic beverages and details of sales by value and volume for each province are given in Table 19.25. *The control and sale of alcoholic beverages in Canada* (Statistics Canada Catalogue 63-202) shows further detail as well as volume figures of production and warehousing transactions, the value and volume of imports and exports and the assets and liabilities of provincial liquor commissions.

Government aid and controls

19.2

Consumer affairs legislation

19.2.1

The federal consumer and corporate affairs department administers federal legislation and policies affecting business, and demonstrates that a competitive marketplace can benefit consumers, business people and investors. Three bureaux share responsibility for achieving the department's marketplace objectives.

The consumer affairs bureau co-ordinates government activities in the field of consumer affairs through five branches: consumer services, consumer research and evaluation, legal metrology, consumer fraud protection and product safety. The corporate affairs bureau administers legislation and regulations pertaining to corporations; its branches are responsible for corporations, bankruptcy, securities and research. The bureau also administers laws pertaining to patents, copyright, timber marks industrial design, and trade marks, with a branch responsible for each of these fields. Canada's participation in international intellectual property organizations is the responsibility of the research and international affairs branch. The bureau of competition policy has branches specializing in resources, manufacturing, services and marketing practices. A research branch undertakes basic research projects. The Restrictive Trade Practices Commission is an independent administrative commission that reports directly to the minister.

The department maintains regional and district offices in Vancouver, Winnipeg, Toronto, Montreal and Halifax, and district and local offices in other cities. These offices ensure that laws and regulations administered by the department with the exception of the statutes administered by the corporations branch are uniformly applied and interpreted in all parts of the country. The field force includes consumer services officers, inspectors and specialists in the fields of bankruptcy and marketing practices such as misleading advertising.

Anti-combines legislation. Canadian anti-combines legislation seeks to eliminate restrictive trade practices in order to stimulate maximum production, distribution and employment through open competition. Legislative measures, including some formerly included in the criminal code, were amended in 1960 and consolidated into the Combines Investigation Act (RSC 1970, c.C-23). An act to amend this act was passed in December 1975 (SC 1974-75-76, c.76) and for the most part came into effect January 1, 1976, the remainder on July 1 of the same year.

The Combines Investigation Act makes illegal the operation of trade practices that prevent, or lessen unduly, competition in production, manufacture, purchase, barter, sale, storage, rental, transportation or supply of a product of trade or commerce. Resale price maintenance, predatory pricing and price discrimination are also prohibited.

Under the act it is illegal to participate in a merger or a monopoly that has operated, or is likely to operate to the detriment of the public, whether consumers, producers or others. Other sections of the act forbid misleading or deceptive advertising, either as to normal price or as to presumably factual statements describing goods or property offered for sale. The act also provides against double ticketing, pyramid selling, referral selling, bait and switch selling, and certain types of promotional contests.

The director of investigation and research, who is also the assistant deputy minister for the bureau of competition policy, is responsible for investigating combines and other restrictive practices. When there are reasonable grounds for believing that a forbidden

practice is engaged in, the director may obtain from the Restrictive Trade Practices Commission authorization to examine witnesses, search premises, or require written returns. After examining all the information available, if the director believes that it proves the existence of a forbidden practice, he submits a statement of the evidence to the commission. Hearings may then be held to gather more information. The director may submit the evidence directly to the attorney general for prosecution without going to the commission after completing an inquiry.

The director may also bring before the Restrictive Trade Practices Commission a broad range of business matters for review under civil procedures. The commission is empowered to issue appropriate remedial orders where serious anti-competitive effects are found.

Food. In areas of health, grading, standards and composition, the Food and Drug Act, the Canadian Agricultural Products Standards Act and the Fish Inspection Act are generally applicable. The consumer and corporate affairs department is charged with administration of the economic fraud aspects in distribution. This responsibility relates mainly to labelling and advertising in any segment of the news media.

Advertising. Most legislation has particular requirements to ensure against misleading advertising. The deceptive marketing provisions of the Combines Investigation Act include general provisions against misleading advertising practices.

Measurement. The Weights and Measures Act prescribes the legal standards of weight and measure for use in Canada; it also ensures control of the types of all weighing and measuring devices used for commercial purposes, and provides for in-use surveillance directed toward the elimination of device-tampering and short-weight sales. A replacing act was passed by Parliament and new regulations were proclaimed in August 1974. The fundamental objectives of earlier legislation remain unchanged. The act is complementary to consumer packaging and labelling legislation.

Metric conversion. The Metric Weights and Measures Act of 1871 made the use of the metric system legal in Canada. The Weights and Measures Act of 1971 specified the most recent evolution of the metric system, the International System of Units (SI), as the legal form of the metric system for use in Canada. The *White Paper on metric conversion in Canada*, tabled in the House of Commons in January 1970, stated that the government accepted the following broad principles: that the eventual adoption in Canadian usage of a single coherent measurement system based on metric units should be acknowledged as inevitable and in the national interest; that this single system should come to be used for all measurement purposes required under legislation, and generally be accepted for all measurement purposes; that planning and preparation in the public and private sectors should be encouraged in a manner to achieve the maximum benefits at minimum cost to the public, to industry, and to government at all levels.

Since 1972 over 2,000 volunteers in all sectors of the economy developed plans for metric conversion. These plans have been published by Metric Commission Canada, which was established by the Canadian government as a result of the white paper, to co-ordinate the changeover. Such widely varied elements of Canadian life as temperature, precipitation, atmospheric pressure, wind speed, road signs, much of the construction and automotive industries, grain sales, wines, seeds, furniture, the petroleum industry, postal scales and many grocery store items have been converted to metric, and the gradual process is continuing.

In accordance with a plan developed by the working group on scales in the retail food industry, the mandatory conversion to metric of in-store weighing of meats and produce was instituted in July 1979 in Peterborough, Sherbrooke and Kamloops, and was to have been extended to most of the rest of Canada from January 1980 to December 1981. Because of some resistance this extension was delayed by the government for a minimum of one year. The voluntary conversion of sales of livestock and poultry to meat packers and of dressed meats to wholesalers and retailers became impractical in the face of the government decision to postpone the retail food scale conversion. Further development in these two sectors will be conditioned by the government decision on the resumption of in-store metric weighing of meats.

Inspection of energy-use instruments. The Electricity Inspection Act and the Gas Inspection Act control the approval before sale and the use of instruments used for measuring electricity and gas whether by meter or other type of device; they also provide for continual in-use inspection.

Appliance labelling, energy consumption. Refrigerators and freezers sold in Canada must now show an Energuide label. This label indicates the kilowatt hours a month of energy consumption of each model. This energy labelling requirement is regulated under the Consumer Packaging and Labelling Act. Washers, dishwashers, clothes dryers and ranges were scheduled for Energuide labelling during 1980.

Corporations branch of the consumer and corporate affairs department administers the Canada Business Corporations Act, the Canada Corporations Act, the Canada Co-operatives Association Act and the Boards of Trade Act. The branch has a statutory duty to issue formal documents in connection with corporations created under other federal acts such as the Loan Companies Act, Trust Companies Act, the Canadian and British Insurance Companies Act, and the Railway Act.

All federal corporations other than those carrying on business as financial intermediaries must be incorporated under the Canada Business Corporations Act, proclaimed in December 1975. However, because that act would not repeal the old Canada Corporations Act until December 15, 1980, the branch was required to administer corporations subject to either act until that date. This policy of gradual implementation of the Canada Business Corporations Act was adopted to enable corporations to effect transition from the old to the new act with a minimum of pressure and inconvenience following a relatively simple continuance procedure. One part of the Canada Corporations Act continues to apply to all federal charitable and membership corporations.

Ancillary to its formal activities, the branch furnishes to the public copies of corporate documents. By July 1979 all corporate name search services had been automated and were being provided through private search houses with access to more than one million incorporated and unincorporated entities that exist in Canada (15,000 of which are federally incorporated) and close to 150,000 registered trade marks.

International trade

19.3

Summary

19.3.1

In 1978 there was strong growth in the value of Canada's external trade. Exports increased nearly 19%, marking the third consecutive year of substantial growth following the world recession of 1975. Imports grew at a slightly slower pace, with the result that Canada's merchandise trade balance recorded an increased surplus of \$2.9 billion in 1978. The trade balances in Table 19.26 are given on the customs basis, based on data tabulated from customs documents according to concepts and procedures explained in section 19.3.4. Trade balances are also available on a balance-of-payments basis, reflecting a number of adjustments applied to customs data to make them consistent with the concepts and definitions used in the System of National Accounts. (See Chapter 23 for balance of payments data.)

Price increases accounted for a substantial portion of the increased trade values, particularly for imports. After no change in 1976, the import price index rose 12% in 1977 and 13% in 1978. In spite of large increases in the value of imports, the physical volume increases amounted to only 0.5% in 1977 and 3.1% in 1978.

For domestic exports, price increases were less than for imports and growth in physical volume more substantial. Volume growth of 9% in 1977 and 10% in 1978 was concentrated in fabricated materials and end products, though the volume of food, feed, beverages and tobacco exports also increased substantially in 1977. Volume of crude materials exports has declined steadily since 1973.

Of 1978 import value, 62.2% was accounted for by end products (Table 19.27). Fabricated materials accounted for 17.6%, crude materials for 11.8%, and food, feed, beverages and tobacco for 7.4%. Largest commodity import groups were motor vehicles

and parts 26.5%, up from 24.0% in 1975, industrial machinery 8.6%, crude petroleum 7.0%, down in proportion from 9.5% in 1975, chemicals 5.2%, agricultural machinery 3.0% and communications equipment 3.0%.

End products, although only half as important for exports as for imports, accounted for slightly more than one-third of total export value in 1978, 36.2% compared with 32.2% in 1975 (Table 19.28). Fabricated materials also accounted for just over one-third of exports, 36.4% in 1978 up from 30.3% in 1975. Crude materials accounted for 17.0% and food, feed, beverages and tobacco for 9.8%.

In 1978 the most important export commodities were motor vehicles and parts 23.9%, up from 21.9% in 1975, forest products (lumber, wood pulp and newsprint) 16.0%, crude and fabricated metals including ores and concentrates 13.6%, natural gas 4.2%, up from 3.4% in 1975, crude petroleum 3.0%, down from 6.2% in 1975 and wheat 3.7%, down from 6.2% in 1975.

19.3.2 Trade with the United States

The United States increased its share of Canadian trade in both directions, from 68.1% of imports in 1975 to 70.6% in 1978, and from 65.1% of exports in 1975 to 70.4% in 1978. Imports from the United States increased 15.6% in 1977 and 18.2% in 1978 (Table 19.31) compared with 12.9% and 18.0% respectively for global imports. Exports to the United States increased 20.1% in 1977 and 19.5% in 1978, compared with 15.8% and 18.6% for exports to all countries.

After adjusting for conceptual differences, which normally add to the balance calculated from Canadian data, the reconciled trade surplus with the United States measured US\$1.6 billion in 1977 compared with a 1975 deficit of US\$1.3 billion (Table 19.32).

Integration of the automotive industry following the Canada-US automotive products trade agreement of 1965 resulted in large flows of automotive products across the Canada-US border, accounting for 31.3% of domestic exports to the United States in 1978, and 34.1% of imports from the United States.

Automotive parts account for a much larger proportion of imports of automotive products than of exports because a high volume of parts are imported into Canada, assembled and exported in the form of complete vehicles. In this instance, the term

The United States has long been Canada's best trading partner and in 1978 provided 70.6% of Canada's imports at more than \$35 billion and bought 70.4% of Canada's exports valued at more than \$37 billion.

parts refers to components designed for motor vehicles or motor vehicle engines. Excluded are some general purpose components which may be used elsewhere than in a motor vehicle, such as tires, radios, batteries and generators. Parts accounted for 63% of automotive imports in 1978 compared with 37% of exports.

In 1978 exports of automotive products grew more rapidly than imports, as in both 1976 and 1977. Exports of parts, including engines, were 22% higher in 1978, and shipments of all vehicles expanded 17% with exports of trucks up 31%. Imports of parts increased by 14.5% and of vehicles by 9%.

Imports of all end products from the United States grew 17% in 1978, with notable increases for other equipment and tools, (up 23%) and machinery (up 18%). Imports of fabricated materials were 23% higher and crude materials imports expanded 29%, as shipments of crude petroleum from the United States nearly doubled in value.

Other Canadian exports to the United States were strong in 1978, with the exception of crude materials. Fabricated materials exports expanded 30%, with lumber shipments up 40% and newsprint up 25%. As well, exports of chemicals, iron and steel, aluminum and precious metals increased substantially. Large increases for industrial machinery (up 25%) and other equipment and tools (up 45%), in addition to shipments of automotive products, contributed to a 23% increase in exports of end products to the United States.

Trade with other countries

19.3.3

The shares of various trading areas in Canada's import and export trade fluctuates from year to year according to economic conditions in different parts of the world, but some long-term trends are apparent. The United Kingdom's share of Canadian trade, both exports and imports, has declined steadily to reach 3.2% of imports and 3.8% of exports in 1978. At the same time, Japan's share increased, then stabilized in the mid-1970s, reaching 4.5% of imports and 5.8% of exports in 1978. The share of other EEC countries has been fairly stable. All other countries' share of Canada's imports increased in the mid-1970s, peaking in 1975. Imports from petroleum exporting countries and from developing areas such as Taiwan, South Korea and Hong Kong have contributed to the increased share from other countries. The share of exports to other countries fluctuates from year to year, depending to a considerable extent on demand for grains by such countries as the USSR and the People's Republic of China.

Sources of statistics

19.3.4

Canada's external trade statistics are tabulated from copies of administrative documents collected by customs offices at ports across Canada. The Customs Act requires that each time goods are imported into or exported from Canada a document be filed with customs giving such descriptions of the goods and details of the transaction as are required for customs administration. It follows that the method of compilation of external trade statistics is determined and limited to some extent by customs regulations and procedures.

Statistics on trade in electricity and on exports of crude petroleum and natural gas cannot, for administrative reasons, be obtained from customs documents. They are instead collected by Statistics Canada.

Concepts and definitions used in the compilation of external trade statistics are published in *Summary of external trade* (Statistics Canada Catalogue 65-001). Among them are the following:

System of trade. Canadian statistics are tabulated according to the general system of trade. Thus imports include all goods which have crossed Canada's geographical boundary, whether they are entered through customs for immediate use in Canada or stored in bonded customs warehouses. Domestic exports include goods grown, extracted or manufactured in Canada (including goods of foreign origin which have been materially transformed in Canada). Re-exports are exports of goods of foreign origin which have not been materially transformed in Canada (including goods withdrawn for export from bonded customs warehouses).

Coverage. Merchandise trade includes only goods which add to or subtract from the stock of material resources in Canada as a result of their movement across the Canadian border.

Valuation. Exports are recorded at values which usually reflect the actual selling price. Most exports are valued at the place in Canada where they are loaded aboard a carrier for export (a mine, farm or factory) but a significant proportion of exports by water or air reflect values which include transportation charges to the port of export. Some overland shipments to the United States are recorded at a value which includes transportation charges to the ultimate destination.

Imports are generally recorded at the values established for customs duty purposes. Customs values are identical to selling prices for most arms-length transactions. However, customs values exceed company transfer prices for most transactions between affiliated firms. Import documents are required to show values which exclude all transportation charges. Some imports from the US are, however, purchased on a delivered basis and their prices reflect an allowance for transportation costs.

Trading partner attribution. Imports are attributed to the country from which the goods were first consigned directly to Canada, whether or not this is the country of origin. An exception is made for goods from Central or South America consigned to Canada from the United States; such imports are credited to the country of origin.

Exports are attributed to the country which is the last known destination of the goods at the time of export. (Many primary products are shipped to entrepôt points, particularly in Europe, for re-export to the ultimate destination which is unknown when the goods leave Canada.) The country classification employed by Statistics Canada is designed for purposes of economic geography and therefore does not reflect the views or intentions of the federal government on international issues of recognition, sovereignty or jurisdiction.

Reconciliation. Canadian trade statistics rarely agree with the counterpart statistics of its trading partners. The major factors contributing to the discrepancies are differences in concepts and collection procedures. Conceptual differences are most common in statistical treatment of special categories of trade such as military supplies, government-financed gifts of commodities, postal and express shipments, tourist purchases, bunker and warehouse trade, in the definition of territorial areas, and in the system of crediting trade by countries. Differences in collection procedures lead to discrepancies in valuation, since the value of trade can be based on customs value, transaction value, or fair market value with or without the inclusion of transportation charges; in timing, since the definition of a statistical month or year can differ; and in the capture of trade data, since the documentation of export trade tends to be less closely monitored than import trade. The United States and Canada have agreed on concepts and definitions describing a framework within which it has been possible to reconcile differences in trade statistics published by the two countries.

Indexes of price and volume. The price indexes in Table 19.33 are current-weighted and are calculated from price relatives based on 1971 = 100. The weights are trade quantities for the month, quarter or year to which the index refers and hence change from period to period. The volume index is derived by dividing a value index by the corresponding current-weighted price index. The resulting volume index is, therefore, weighted with fixed 1971 price weights. The price indicators selected are either commodity unit values calculated directly from the trade statistics or, particularly in the case of end products, price indexes obtained from other Canadian or foreign statistics.

An explanation of the methodology used to construct the indexes is contained in a reference paper entitled *The 1971-based price and volume indexes of Canada's external trade*, published in December 1976 as a supplement to *Summary of external trade* (Statistics Canada Catalogue 65-001).

Principal trading areas. The principal trading areas shown in some tables include groupings which are defined as follows: other EEC — Belgium, Denmark, France, Federal Republic of Germany, Ireland, Italy, Luxembourg and the Netherlands (the UK is also a member of the EEC but is shown separately because of the importance of its trade with Canada); other OECD — Austria, Finland, Greece, Iceland, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, Australia and New Zealand (the EEC countries, United States, Japan and Canada are also members of OECD); other America — defined as all countries and territories of North and South America (other than the United States and Canada) including Greenland, Bermuda and Puerto Rico.

19.4 Federal trade services

Canada's economy continues to be vitally dependent on international trade. Competition among industrial nations is intense and increased exports are not easy to achieve. A successful export trade can only be assured by combining good products, efficient production and aggressive, intelligent marketing with government support.

Federal government support is provided through the industry, trade and commerce department and the Export Development Corporation. The department assists Canadian industry throughout the complete cycle — from research, design and development through production to marketing of the finished product. The Export Development Corporation, a Crown agency which reports to Parliament through the minister of industry, trade and commerce, provides insurance, guarantees, loans and other financial facilities to help Canadian exporters.

The economic policy and analysis sector of the industry, trade and commerce department has an ongoing responsibility to apply good economic analysis to current policy issues, and at the same time give full consideration to long-term policy. It provides support and advice to all other sectors of the department, particularly in the fields of industry and commerce development, finance, and international trade relations. International economics and industrial development are analyzed with emphasis on their significance for the Canadian economy and medium-term economic policy. Canada's situation is studied in terms of world economic development and trade policy options. A bi-annual survey is conducted of capital expenditure plans of 300 of Canada's largest companies, data are collected on subsidiaries of foreign-owned companies, and an extensive data base is maintained on trade by industrial sector.

Department of Industry, Trade and Commerce

19.4.1

The department has a number of units involved in international trade. An explanation of their role follows.

The office of general relations includes a general trade policy branch and a commodity trade policy branch, responsible, within the department, for formulating and implementing Canadian trade policy with particular reference to the activities of the General Agreement on Tariffs and Trade (GATT), the Organization for Economic Co-operation and Development (OECD), the United Nations Conference on Trade and Development (UNCTAD) and the trade aspects of domestic industrial and agricultural policies. It is also responsible for commodity trade policy questions generally and in particular the preparation and conduct of the negotiation of intergovernmental commodity arrangements and agreements.

The international marketing policy group was formed late in 1979 to provide a focus for the management of international marketing efforts. The group is responsible for the planning, co-ordination and evaluation of federal policies and programs as they relate to export development and promotion, and the development and monitoring of export marketing plans and strategies. The group serves as the secretariat for the export trade development board, a board of private sector members and several deputy ministers and heads of export-related agencies which review and make specific recommendations to the minister regarding trade development programs and policies.

The office of special import policy implements government policies relating to low-cost imports. It proposes action to be taken by government in the light of recommendations of the Textile and Clothing Board (with respect to imports of textiles and clothing) and of the Anti-dumping Tribunal (with respect to other low-cost products), as well as in other instances where low-cost imports have caused or threaten serious injury to domestic production. It conducts restraint negotiations with other governments and implements special measures of protection by means of import controls when required. It is also responsible for the conduct of international textile negotiations within GATT and participates in the work of the textiles surveillance body established under an arrangement regarding international trade.

The international bureaux (European bureau, Pacific, Asia and Africa bureau, and Western Hemisphere bureau) are focal points on matters affecting Canada's trade and economic relations with other countries and areas. Bureau responsibilities include development of Canada's international trade strategy, market development programs for individual countries and areas and maintenance and improvement of access for Canadian products to export markets. The bureaux are centralized sources of information on Canada's trade with specific countries or regions and they provide a regional perspective for matters of both international trade relations and export trade development. They also provide information, advice and guidelines to government agencies and to the business community on foreign government trade and economic regulations and practices; maintain contact, normally through Canadian posts abroad, with foreign markets and foreign governments on matters pertaining to markets for Canadian exports; and provide advice to the department, to other Canadian government

Canada's trade



agencies and to the Canadian business community on export market problems and opportunities.

The trade commissioner service has 89 trade offices in 65 countries. Its primary role is to promote Canada's export trade and to represent and protect its commercial interests abroad. Accordingly, a trade commissioner has a variety of responsibilities: to act as an export marketing consultant; to bring foreign buyers into contact with Canadian sellers; to help organize trade fairs and trade missions; to recommend modes of distribution and suitable agents; and to report on changes in tariffs, exchange controls and other matters affecting Canada's trade with the countries to which he or she is accredited. A trade commissioner initiates programs to develop new markets for Canadian products, responds to inquiries from Canadian firms and provides advice to the visiting Canadian

exporter. He or she also acts on behalf of the foreign programs of a number of other federal government departments and undertakes agricultural reporting at specified posts. For a Canadian firm wishing to develop a foreign market the trade commissioner can supply information on product use, if any, local production and import data, and prospective users or agents.

The scheduled return of trade commissioners for official tours of Canada helps Canadian firms interested in the export trade. Trade associations are informed in advance of these visits so that business persons wishing appointments may arrange them through one of the department's regional offices. These 11 Canadian regional offices managed by the trade commissioner service are a focus for departmental programs in the regions and the primary links between the business community and trade commissioner service posts abroad. These offices administer a number of the department's funded programs to assist industry, such as the enterprise development program (EDP) and the program for export market development (PEMD), and offer an export counselling service, supported by specialists.

The office of overseas projects provides and co-ordinates government support of Canadian companies seeking capital projects in the export market. The office seeks to maximize the export of Canadian goods and services to projects financed by the international financing institutions (IFIs), helping companies identify and carry on business matched to Canadian capabilities. The office also facilitates financing involving such institutions as EDC, CIDA, the World Bank and the IFIs for product sales as well as projects. A cost recoverable technical assistance program, administered by the office, enables Canadian government departments to provide technical assistance to foreign governments on a cost-reimbursable basis, at the same time facilitating sales of goods and services abroad by the Canadian private sector.

The grain marketing office is concerned with federal government activities in marketing assistance and industrial development for grain, oilseeds and their bulk derivatives. It contributes to overall grain production, transportation and marketing policy formulation and works closely with the Canadian Wheat Board on grain sales and promotion programs. Its continuing operational responsibility includes the institution and administration of programs designed to expand exports of grain, oilseeds and products and to help stabilize the market, and to encourage industrial development in the sector. Among these are the grain credit sales, prairie grain advance payments, and domestic feed grain reserve stocks programs. The office also administers programs designed for more specific applications such as the rapeseed utilization assistance program and a freight assistance program for rapeseed products as well as providing financial assistance to the POS Pilot Plant (title derived from the components protein, oil and starch) in Saskatoon, Canadian International Grains Institute and the Canada Grains Council. The office participates in the activities of international organizations concerned with grain and oilseeds such as the International Wheat Council and the Food and Agriculture Organization of the United Nations.

The transportation services branch represents trade, tourism, and industry interests in formulating and implementing policies on international and domestic air transport, maritime transport, and truck and rail services; assists the business community and governments regarding legislative and regulatory changes in transportation and in resolving rates and services problems. The branch undertakes research and development, industrial development and marketing on behalf of such traffic service industries as freight forwarding, cargo and passenger insurance, transport packaging, warehousing; administration of applicable departmental support programs; and trade facilitation activities, particularly with respect to trade documentation, bills of lading and customs documents.

The distribution services branch represents wholesale and retail industry interests in government policy-making, research and development, and industrial development and marketing on behalf of Canada's distributive trades such as trading houses and franchising. It promotes use of these and other marketing channels for Canadian manufacturing and trade.

The trade fairs and missions branch administers a program through which promotional projects are initiated, organized and implemented by the department. This includes participation in international trade fairs, solo shows and in-store promotions overseas; organizing technical seminars and incoming and outgoing trade missions; and sponsoring foreign visits to Canada to stimulate the sale of Canadian products in various export markets. The department provides promotional publicity for these projects.

In general, missions abroad are used for market investigation, evaluation and identification of technical market access problems; visiting missions are designed to invite foreign government or company representatives who can influence buying to inspect the industrial capacity and technical capabilities of Canadian firms and the products and services they can supply. Technical seminars acquaint potential buyers with Canadian expertise and technology in specific fields as a basis for joint ventures and sales of Canadian products and services. The trade visitors section of the program provides financial assistance at short notice to take advantage of foreign market opportunities by bringing foreign government trade representatives, buyers and export-oriented trainees to Canada.

The defence programs branch promotes defence export trade through marketing programs aimed at the sale of Canadian defence and defence-related high technology equipment to friendly countries and the establishment of arrangements with Canada's allies for co-operative industrial research, development and production in defence-related matters. A major activity is the Canada-United States program on defence development and production sharing which entails the joint development and reciprocal procurement of defence items.

19.4.2 Canadian Government Office of Tourism (CGOT)

The government's office of tourism is an agency of the industry, trade and commerce department. It is headed by an assistant deputy minister, tourism, who, through the deputy minister, advises the industry, trade and commerce minister on policy and operational matters relating to development and promotion of tourism in Canada. He represents federal interests in domestic and international tourism organizations.

A reorganization in April 1979 reflected changing conditions affecting tourism in Canada. The office was organized into three program activities: program management and administration, tourism development and tourism marketing.

The program management and administration activity provides direction to the CGOT and the whole tourism program; ensures ongoing research support in supply, demand, cost/benefit and impact studies; establishes a tourism data base; plans and recommends policy including the development of a national tourism plan; determines program options and priorities; monitors program activity operations; and acts through a co-ordination secretariat as the focal point for government and industry relations.

The tourism development activity ensures that Canadian tourism attractions, facilities and services are increasingly competitive in attracting visitors and catering to their needs; identifies development problems constraining Canadian tourism or the efficiency and effectiveness of the tourism industry, and with industry and provincial governments develops solutions and initiates action for a national framework for tourism development, augmenting this with representation by regional tourism development officers across Canada.

The tourism marketing activity identifies target groups in markets of high potential for travel to Canada; presents Canada as a destination able to satisfy the requirements of foreign visitors and Canadians alike; promotes Canada's facilities for meetings and incentive travel; and creates awareness of the importance of tourism to the economy and of the need for a welcoming attitude to the visitor. Offices are maintained in nine countries, including Britain, France, Federal Republic of Germany, the Netherlands, Mexico, Australia and Japan, as well as the United States and Canada. Data on tourist movement and income generated are given in Chapter 17.

19.4.3 Export Development Corporation (EDC)

EDC is a commercially self-sustaining enterprise owned by the federal government. It provides financial services to help Canadian export trade expand and create employment

in Canada. It provides insurance, guarantees, long-term loans and services necessary for exporters and investors to compete in international markets. EDC does not subsidize exporters or investors. Canadian firms compete in foreign markets on the normal commercial basis of price, quality, delivery and service.

EDC is sensitive to the needs of the smaller exporter. There is no minimum value of export business required to qualify for support. EDC will consider, within limits, tailoring programs to meet specific needs of exporters who show high potential for growth. Canadian content is a requirement for EDC support which generally only insures or finances goods which are manufactured in Canada and the services of Canadians. Some minor exceptions can be accommodated in the overall product or package. All persons carrying on business in Canada are eligible to benefit by EDC services, which are provided through five programs.

Export credits insurance is provided to exporters and guarantees are available to banks and other financing institutions that finance Canadian exporters. Insurance is issued on a co-insurance basis with EDC assuming up to 90% and the insured retaining 10% of the risk of non-payment by foreign buyers. Coverage includes commercial risks such as insolvency of, or default by, the buyer, and political risks such as exchange transfer difficulties, loss through war or rebellion, and cancellation of import licences.

There are two types of EDC policy. A whole turnover policy covers an exporter's short-term credit sales, up to 180 days, to all countries for one year. A specific contracts policy covers a specific capital goods or major services transaction made on credit terms up to five years.

Long-term export loans are available to finance the sale of Canadian capital equipment, and engineering, consulting and other technical services to foreign buyers. EDC also makes long-term loans to foreign buyers of Canadian capital goods and services, or guarantees bank loans to such buyers. Funds are disbursed directly to Canadian suppliers on behalf of the borrower, in effect providing the exporters with cash sales. Such loans have ranged from \$92,000 to multiples of millions. Besides, EDC establishes credit with certain countries where such arrangements will facilitate and stimulate the export of capital goods and services from Canada.

Some examples of sales of capital equipment and services that have been financed include, by industry: (power) conventional and nuclear power plants, electrification programs and transmission lines; (transportation) aircraft, airport projects, flight simulators, navigational equipment, ocean-going vessels, locomotives, rolling stock, subway systems and integrated pipelines; (communications) equipment for telecommunications such as telephone systems, microwave facilities and earth satellite stations; (service) services related to appraisal and development of natural resources, primary and secondary industry projects, and public utilities projects; (other capital goods) equipment for wood, pulp and paper, chemical, mining, construction and metallurgical projects. Under certain conditions, long-term loans and guarantees would be available for airport terminals and hotels. Financing may be provided for services when opportunities exist for associated supply of equipment.

Foreign investment guarantees. EDC offers insurance against loss of Canadian investments abroad through political action, and the risks of inconvertibility, expropriation, war or revolution. Investments may vary from that of an investor acquiring the right to share in the assets and profits of a business carried on in a foreign country, to that of an investor lending money to a person in a foreign country to establish a business there. The contract is available for up to 15 years. EDC requires the investor to carry part of the risk, normally 15%.

Only new investments qualify for this insurance but there is flexibility as to the type. The major criterion for coverage is that the proposed Canadian investment benefit both Canada and the host country. Benefits to Canada include royalties, salaries for Canadian personnel serving abroad, and proceeds from continuing sales of replacement parts, components and raw materials. Benefits to the host country include expansion of employment, gains in production techniques and skills, and a higher standard of living.

Surety insurance is available for Canadian exporters, banks and other financial institutions against calls on performance bonds and guarantees. In the case of forfeiture-type bonds, normally provided by the exporter's bank in an irrevocable letter of credit in favour of the buyer, callable on demand and not allowing remedial action to be taken, EDC may: insure the bank or other financial institution against a call on the bond; insure the exporter against wrongful call; and insure members of a limited liability exporting consortium against non-performance by one or more of its members.

In the case of non-forfeiture bonds, which require proof of default and provide for remedial action to be taken, EDC may insure the surety company which provides the bond, sharing the risk of loss on a basis of a percentage of the insured risk.

Contractor surety insurance enables Canada's construction industry to carry its expertise offshore. This insurance is extended to construction projects which would not normally qualify for surety under EDC requirements for Canadian material and labour content because of a substantial share of local costs. It includes the same forms of protection as the surety insurance program.

19.5 Tariffs and trade agreements

19.5.1 Canadian tariff structure

Information relating to rates of duty, value for duty and anti-dumping duty is available from the national revenue department, customs and excise, which administers the Customs Act, customs tariff and the Anti-dumping Act. Details of the organization and functions of the Tariff Board will be found in Appendix 1.

The Canadian tariff consists, in the main, of four sets of tariff rates — British preferential, most-favoured-nation, general and general preferential.

British preferential tariff rates are applied to imported commodities from British Commonwealth countries, with the exception of Hong Kong, when conveyed without trans-shipment from a port of any British country enjoying the benefits of the British Commonwealth preferential tariff into a port of Canada. Some Commonwealth countries have trade agreements with Canada that provide for rates of duty, on certain specified goods, lower than the British preferential rates.

Most-favoured-nation rates are usually higher than the British preferential rates and lower than the general tariff rates. They are applied to commodities imported from countries with which Canada has trade agreements. These rates would apply to British countries when they are lower than the British preferential tariff rates. The most important trade agreement concerning the effective rates applied to goods imported from countries entitled to most-favoured-nation rates is the General Agreement on Tariffs and Trade (GATT).

General tariff rates are applied to goods imported from the few countries with which Canada has not made trade agreements.

The general preferential tariff came into effect on July 1, 1974, as a result of Canada's acceding to a generalized system of preferences designed to allow lower rates of duty on goods imported from developing countries. Generally, the rates are the lesser of the British preferential tariff or the most-favoured-nation tariff minus one-third.

Despite the numerous tariff items and the various rates of duty applicable to each item, there are numerous goods which are duty free under all four tariffs.

Value for duty. In general, the Customs Act provides that the value for duty of imported goods shall be the fair market value of like goods in the home market of the exporter at the time and place from which the goods are shipped directly to Canada when sold to purchasers with whom the vendor deals at arm's length and who are at the same trade level as the importer, and in substantially the same quantities for home consumption in the ordinary course of competitive trade. Where like goods are not sold for home consumption and in a few special cases, other methods are used to determine the value for duty. Ordinarily it may not be less than the amount for which the goods were sold to the purchaser in Canada, exclusive of all charges after their shipment from the country of export.

Anti-dumping Act. Canada's Anti-dumping Act provides, in brief, that where goods are dumped (the export price is less than the normal value) and such dumping causes material injury to the production of similar goods in Canada, or retards the establishment of production in Canada of similar goods as determined by the Anti-dumping Tribunal, there shall be an anti-dumping duty. The amount of this duty is equal to the margin of dumping of the entered goods.

Drawback. Drawback legislation is designed to remove the customs duty and sales tax included in the manufacturers' costs to enable them to compete more equitably both abroad and at home with foreign manufacturers. It does this by granting a drawback, in the case of Canadian exporters, of customs duty and sales taxes paid on imported parts or materials used in Canada in the manufacture of goods subsequently exported. In certain strategic industries in Canada (aircraft, automobiles and other secondary manufacturers), costs of plant equipment or key materials are reduced in the same manner when specified imported goods are used in eligible Canadian manufacturing. Other areas where drawbacks are payable include: ships stores; joint Canada-US projects; and imported goods exported or destroyed in Canada.

Tariff and trade arrangements

19.5.2

Canada's tariff arrangements with other countries fall into three main categories: trade agreements with a number of Commonwealth countries; the General Agreement on Tariffs and Trade (GATT); and other arrangements.

Canada signed the protocol of provisional application of the General Agreement on Tariffs and Trade on October 30, 1947 and brought the agreement into force on January 1, 1948. The agreement provides for scheduled tariff concessions and the exchange of most-favoured-nation treatment among the contracting parties, and lays down rules and regulations to govern the conduct of international trade. As at February 1980 there were 85 members and two provisional members as follows:

Argentina, Australia, Austria, Bangladesh, Barbados, Belgium, Benin, Brazil, Burma, Burundi, Cameroon, Canada, Central African Republic, Chad, Chile, Congo, Cuba, Cyprus, Czechoslovakia, Denmark, Dominican Republic, Egypt (Arab Republic of), Finland, France, Gabon, Gambia, Germany (Federal Republic of), Ghana, Greece, Guyana, Haiti, Hungary, Iceland, India, Indonesia, Ireland, Israel, Italy, Ivory Coast, Jamaica, Japan, Kenya, Korea (Republic of), Kuwait, Luxembourg, Madagascar, Malawi, Malaysia, Malta, Mauritania, Mauritius, Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Pakistan, Peru, Philippines, Poland, Portugal, Rhodesia, Romania, Rwanda, Senegal, Sierra Leone, Singapore, South Africa, Spain, Sri Lanka, Suriname, Sweden, Switzerland, Tanzania, Togo, Trinidad and Tobago, Turkey, Uganda, United Kingdom, United States of America, Upper Volta, Uruguay, Yugoslavia and Zaire.

The two countries acceded provisionally to the GATT were Colombia and Tunisia.

GATT has also been applied to 30 territories which now, as independent states, maintain a de facto application of the general agreement pending decision as to their future commercial policies. They include the following:

Algeria, Angola, Bahamas, Bahrain, Botswana, Cape Verde, Dominica, Equatorial Guinea, Fiji, Grenada, Guinea-Bissau, Kampuchea, Kiribati, Lesotho, Maldives, Mali, Mozambique, Papua New Guinea, Qatar, St. Lucia, St. Vincent, Sao Tomé and Principe, Seychelles, Solomon Islands, Swaziland, Tonga, Tuvalu, United Arab Emirates, Yemen (People's Democratic Republic of) and Zambia.

Trade relations between Canada and a number of other countries are governed by trade agreements of various kinds, by exchange of most-favoured-nation treatment under orders-in-council, and by even less formal arrangements. Details are available from the appropriate international bureaus of the industry, trade and commerce department.

Tariff preferences for specified countries

19.5.2.1

Canada implemented a system of tariff preferences for specified countries in July 1974. Imports of most manufactured and semi-manufactured products from designated

beneficiary countries will be subject to the lower of the British preferential tariff or the most-favoured-nation tariff, less one-third. The only notable product group to which the preference system does not apply is textiles.

Beneficiary countries: Afghanistan, Algeria, American Samoa, Angola, Antigua, Argentina, Ascension, Bahamas, Bahrain, Bangladesh, Barbados, Belize, Benin (formerly Dahomey), Bermuda, Bhutan, Bolivia, Botswana, Brazil, British Indian Ocean Territory, British Solomon Islands, British Virgin Islands, Brunei, Bulgaria, Burma, Burundi, Cameroon, Cape Verde Islands, Caroline Islands, Cayman Islands, Central African Republic, Chad, Chile, China (People's Republic of), Christmas Island, Cocos Islands, Colombia, Comoro Archipelago, Congo, Cook Islands, Costa Rica, Cuba, Cyprus, Dominica, Dominican Republic, Ecuador, Egypt (Arab Republic of), El Salvador, Equatorial Guinea, Ethiopia, Falkland Islands, Fiji, French Polynesia, French Southern and Antarctic Territories, French Territory of the Afars and the Issas, Gabon, Gambia, Ghana, Gibraltar, Gilbert and Ellice Islands, Greece, Grenada, Guam, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hong Kong, India, Indonesia, Iran, Iraq, Israel, Ivory Coast, Jamaica, Jordan, Kampuchea (formerly Cambodia), Kenya, Korea, Kuwait, Laos, Lebanon, Lesotho, Liberia, Madagascar (Democratic Republic of), Malawi, Malaysia, Maldives, Mali, Malta, Mauritania, Mauritius, Mexico, Montserrat, Morocco, Mozambique, Nauru, Nepal, Netherlands Antilles, New Caledonia and dependencies, Nicaragua, Niger, Nigeria, Niue, Norfolk Island, Pakistan, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Pitcairn, Portugal, Portuguese adjacent islands, Portuguese overseas provinces, Qatar, Romania, Rwanda, St. Christopher-Nevis-Anguilla, St. Helena, St. Lucia, St. Vincent, Sao Tomé and Príncipe, Senegal, Seychelles, Sierra Leone, Singapore, Somalia, Spanish North Africa, Sri Lanka, Sudan, Suriname (Republic of), Swaziland, Syrian Arab Republic, Tanzania (United Republic of), Thailand, Togo, Tokelau Islands, Tonga, Trinidad and Tobago, Tristan da Cunha, Tunisia, Turkey, Turks and Caicos Islands, Uganda, United Arab Emirates, Upper Volta, Uruguay, Venezuela, Virgin Islands of the United States, Western Samoa, Yemen Arab Republic, Yemen (People's Democratic Republic of), Yugoslavia, Zaire (Republic of) and Zambia.

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- 19.3 External Trade Division, Economic Statistics Field, Statistics Canada.
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- 19.4.3 Export Development Corporation.
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Tables

.. not available

... not appropriate or not applicable

-- nil or zero

-- too small to be expressed

e estimate

p preliminary

r revised

certain tables may not add due to rounding

19.1 Retail trade, by kind of business and by province, 1975-78, percentage change 1977-78 and percentage distribution 1978

Kind of business and province	1975 \$'000,000	1976 \$'000,000	1977† \$'000,000	1978 \$'000,000	Percentage change 1977-78	Percentage distribution 1978
Kind of business						
Combination stores (groceries and meat)	9,728.4	10,434.4	11,442.5	12,967.0	+11.0	18.8
Grocery, confectionery and sundries stores	2,255.4	2,721.4	2,928.3	3,286.2	+12.2	4.8
All other food stores	897.1	1,033.0	1,041.1	1,175.6	+12.9	1.7
Department stores	5,786.0	6,509.6	6,941.0	7,694.8	+10.9	11.2
General merchandise stores	1,598.2	1,565.5	1,653.0	1,747.7	+5.7	2.5
General stores	995.5	1,083.6	1,206.6	1,347.0	+11.6	2.0
Variety stores	818.8	876.1	892.5	901.7	+1.0	1.3
Motor vehicle dealers	10,183.7	11,057.9	11,749.7	13,479.5	+14.7	19.6
Used car dealers	182.6	186.3	211.3	267.7	+26.7	0.4
Service stations	3,302.1	3,891.9	4,257.4	4,578.8	+7.5	6.6
Garages	554.8	704.0	815.0	957.0	+17.4	1.4
Automotive parts and accessories stores	1,088.0	1,141.2	1,191.3	1,369.4	+15.0	2.0
Men's clothing stores	663.5	761.1	765.8	840.4	+9.7	1.2
Women's clothing stores	862.7	1,005.9	1,095.4	1,248.2	+13.9	1.8
Family clothing stores	739.7	833.4	858.0	932.2	+8.6	1.3
Specialty shoe stores	48.9	55.3	60.6	92.0	+51.8	0.1
Family shoe stores	425.0	484.9	538.7	584.1	+8.4	0.8
Hardware stores	580.9	638.8	668.2	706.3	+5.7	1.0
Household furniture stores	803.2	870.4	931.1	1,068.0	+14.7	1.6
Household appliance stores	215.7†	235.1	236.4	247.9	+4.9	0.4
Furniture, TV, radio and appliance stores	510.7†	524.0	502.5	494.9	-1.5	0.7
Pharmacies, patent medicine and cosmetics stores	1,488.1	1,710.9	1,867.0	2,117.7	+13.4	3.1
Book and stationery stores	191.5	238.7	282.4	324.8	+15.0	0.5
Florists	170.6	204.2	228.1	261.4	+14.6	0.4
Jewellery stores	426.8	484.6	534.2	596.3	+11.6	0.9
Sporting goods and accessories stores	517.4	691.0	729.8	816.4	+11.9	1.2
Personal accessories stores	680.4	794.1	889.3	984.6	+10.7	1.4
All other stores	5,692.4	6,433.8	7,134.0	7,771.5	+8.9	11.3
Total	51,408.4	57,166.9	61,651.3	68,859.2	+11.7	100.0
Province or territory						
Newfoundland	972.0	1,048.3	1,136.4	1,297.5	+14.2	11.9
Prince Edward Island	240.6	262.1	286.3	335.5	+17.2	0.5
Nova Scotia	1,619.4	1,821.7	1,936.6	2,242.4	+15.8	3.2
New Brunswick	1,338.3	1,494.6	1,564.5	1,747.3	+11.7	2.5
Quebec	13,020.9	14,447.8	15,558.4	17,185.3	+10.4	24.9
Ontario	19,156.2	21,057.0	22,710.9	25,217.5	+11.0	36.6
Manitoba	2,191.9	2,407.9	2,513.0	2,728.1	+8.6	4.0
Saskatchewan	2,242.5	2,522.1	2,569.3	2,875.1	+11.9	4.2
Alberta	4,557.0	5,289.6	5,927.1	6,798.5	+14.7	9.9
British Columbia	5,938.6	6,674.7	7,287.4	8,240.4	+13.1	12.0
Yukon and Northwest Territories	130.9	140.5	161.2	191.7	+18.9	0.3

19.2 Sales of chain and independent stores, by kind of business, 1977 and 1978 and percentage change 1977-78

Kind of business	Chain stores			Independent stores		
	1977† \$'000,000	1978 \$'000,000	Per- centage change 1977-78	1977† \$'000,000	1978 \$'000,000	Per- centage change 1977-78
Combination stores (groceries and meat)	8,192.5	9,266.4	+13.1	3,250.0	3,700.6	+13.9
Grocery, confectionery and sundries stores	446.2	525.2	+17.7	2,482.2	2,761.0	+11.2
All other food stores	98.6	106.0	+7.5	942.5	1,069.5	+13.5
Department stores	6,941.0	7,694.8	+10.9	—	—	—
General merchandise stores	1,269.0	1,382.6	+8.9	384.0	365.2	-4.9
General stores	343.3	396.4	+15.5	863.3	950.6	+10.1
Variety stores	681.2	682.9	+0.2	211.3	218.8	+3.5
Motor vehicle dealers	145.1	181.9	+25.4	11,604.6	13,297.6	+14.6
Used car dealers	—	—	—	211.3	267.7	+26.7
Service stations	864.0	922.9	+6.8	3,393.3	3,655.9	+7.7
Garages	—	—	—	815.0	957.0	+17.4
Automotive parts and accessories stores	166.5	179.5	+7.8	1,024.7	1,189.9	+16.1

19.2 Sales of chain and independent stores, by kind of business, 1977 and 1978 and percentage change 1977-78 (concluded)

Kind of business	Chain stores			Independent stores		
	1977 [†] \$'000,000	1978 \$'000,000	Per- centage change 1977-78	1977 [†] \$'000,000	1978 \$'000,000	Per- centage change 1977-78
Men's clothing stores	259.2	294.0	+13.4	506.6	546.4	+7.9
Women's clothing stores	584.8	674.9	+15.4	510.5	573.3	+12.3
Family clothing stores	397.3	430.5	+8.4	460.8	501.7	+8.9
Specialty shoe stores	26.6	52.7	+98.1	34.0	39.3	+15.6
Family shoe stores	319.6	378.2	+18.3	219.1	205.9	-6.0
Hardware stores	109.0	101.3	-7.1	559.2	605.0	+8.2
Household furniture stores	146.4	161.8	+10.5	784.8	906.3	+15.5
Household appliance stores	42.1	41.1	-2.4	194.4	206.8	+6.4
Furniture, TV, radio and appliance stores	133.9	92.2	-31.1	368.5	402.7	+9.3
Pharmacies, patent medicine and cosmetics stores	422.0	464.4	+10.0	1,445.0	1,653.3	+14.4
Book and stationery stores	120.3	142.1	+18.1	162.1	182.7	+12.7
Florists	10.9	10.9	—	217.3	250.5	+15.3
Jewellery stores	229.1	266.3	+16.2	305.1	330.0	+8.2
Sporting goods and accessories stores	79.7	88.8	+11.4	650.1	727.6	+11.9
Personal accessories stores	231.8	253.4	+9.3	657.4	731.2	+11.2
All other stores	3,757.4	4,072.8	+8.4	3,376.6	3,698.7	+9.5
Total, all stores	26,017.5	28,864.0	+10.9	35,633.8	39,995.1	+12.3

19.3 Percentage market share of chain stores, by kind of business, selected years 1972-78

Kind of business	1972	1975	1977	1978
Combination stores (groceries and meat)	67.2	69.2	71.5	71.5
Grocery, confectionery and sundries stores	16.0	16.7	15.0	16.0
All other food stores	8.3	9.7	9.5	9.0
Department stores	100.0	100.0	100.0	100.0
General merchandise stores	79.0	78.2	76.6	79.1
General stores	18.3	27.3	28.0	29.4
Variety stores	76.9	75.8	76.2	75.7
Motor vehicle dealers	1.5	1.2	1.2	1.3
Used car dealers	—	—	—	—
Service stations	13.2	21.3	20.0	20.2
Garages	—	—	—	—
Automotive parts and accessories stores	19.7	15.5	13.5	13.1
Men's clothing stores	25.3	27.0	33.2	35.0
Women's clothing stores	46.0	52.2	53.4	54.1
Family clothing stores	31.7	43.3	46.3	46.2
Specialty shoe stores	53.9	46.0	42.2	57.2
Family shoe stores	52.2	57.4	59.1	64.8
Hardware stores	20.2	15.6	16.2	14.3
Household furniture stores	19.3	16.6	15.5	15.1
Household appliance stores	22.5	18.0	17.2	16.6
Furniture, TV, radio and appliance stores	29.2	29.6	25.3	18.6
Pharmacies, patent medicine and cosmetics stores	18.2	22.4	22.4	21.9
Book and stationery stores	26.1	45.9	41.8	43.7
Florists	5.4	4.9	4.8	4.2
Jewellery stores	38.8	42.8	41.8	44.7
Sporting goods and accessories stores	2.4	4.0	9.6	10.9
Personal accessories stores	17.0	24.4	25.0	25.7
All other stores	52.7	53.1	52.7	52.4
Total, all stores	40.4	41.8	42.0	41.9

19.4 Department store sales by department, selected years 1972-78

Department	Sales				
	1972 \$'000,000	1975 \$'000,000	1977 \$'000,000	1978 \$'000,000	Percentage change 1977-78
Women's, misses' and children's clothing					
Women's and misses' dresses, house-dresses, aprons and uniforms	92.0	117.2	141.9	158.3	+11.6
Women's and misses' coats and suits	74.8	122.2	140.5	163.3	+16.3
Women's and misses' sportswear	176.7	278.1	341.2	385.4	+12.9
Furs	16.1	19.4	24.8	30.0	+21.0
Infants' and children's wear and nursery equipment	104.3	160.1	189.8	209.1	+10.2
Girls' and teenage girls' wear	59.4	91.1	106.4	121.8	+14.4
Lingerie and women's sleepwear	66.7	98.1	125.9	146.0	+15.9
Intimate apparel	47.8	59.7	72.3	78.4	+8.6
Millinery	11.5	16.1	16.0	16.5	+3.5
Women's and girls' hosiery	50.0	57.5	68.2	76.0	+11.4

19.4 Department store sales by department, selected years 1972-78 (concluded)

Department	Sales					Percentage change 1977-78
	1972 \$'000,000	1975 \$'000,000	1977 \$'000,000	1978 \$'000,000		
Women's and girls' gloves, mitts and accessories	60.0	89.9	115.6	133.0		+14.9
Women's, misses' and children's footwear	108.2	149.0	178.9	200.6		+12.1
Total, women's, misses' and children's clothing	867.5	1,258.4	1,521.4	1,718.2		+12.9
Men's and boys' clothing						
Men's clothing	178.3	279.3	325.3	359.2		+10.4
Men's furnishings	174.7	245.0	313.6	354.2		+13.0
Boys' clothing and furnishings	69.0	93.4	111.2	119.7		+7.6
Men's and boys' footwear	61.1	96.1	110.7	124.0		+12.0
Total, men's and boys' clothing	483.1	713.8	860.9	957.1		+11.2
Food and kindred products	190.5	330.9	367.8	422.2		+14.8
Toiletries, cosmetics and drugs	185.2	271.3	330.8	364.2		+10.1
Photographic equipment and supplies	60.9	106.8	128.0	129.9		+1.5
Piece goods	53.5	60.2	64.1	68.4		+6.7
Linens and domestics	94.1	148.9	191.2	211.3		+10.5
Smallwares and notions	45.4	59.0	71.5	78.2		+9.4
China and glassware	59.9	75.9	91.1	103.4		+13.5
Floor coverings	84.1	114.5	127.1	137.6		+8.2
Draperies, curtains and furniture covers	72.0	106.4	128.6	138.8		+7.9
Lamps, pictures, mirrors and all other home furnishings	36.9	59.3	74.2	83.5		+12.5
Furniture	176.2	289.8	367.8	426.1		+15.9
Major appliances	182.1	313.3	351.9	385.8		+9.6
Television, radio and music	166.5	245.5	290.1	315.1		+8.6
Housewares and small electrical appliances	125.4	210.4	256.8	288.0		+12.1
Hardware, paints and wallpaper	105.1	194.7	241.1	272.1		+12.9
Plumbing, heating and building materials	36.3	53.8	60.5	68.4		+13.1
Jewellery	67.9	136.9	182.8	206.8		+13.1
Toys and games	82.9	132.9	162.6	172.6		+6.1
Sporting goods and luggage	116.8	195.2	243.0	254.2		+4.6
Stationery, books and magazines	101.8	172.4	202.2	226.8		+12.1
Gasoline, oil, auto accessories, repairs and supplies	81.3	128.6	154.6	162.1		+4.9
Receipts from meals and lunches	79.9	135.0	164.3	184.1		+12.0
Receipts from repairs and services				{ 59.1 }		
All other departments	158.5	272.1	306.7	{ 261.1 }		+4.4
Total, all departments	3,713.9	5,786.0	6,941.0	7,694.8		+10.9

19.5 Retail sales of new motor vehicles, 1971-78

Year	Passenger cars		Trucks and buses		Total	
	No.	\$'000	No.	\$'000	No.	\$'000
1971	780,762	2,737,516	159,570	815,535	940,332	3,553,051
1972	858,959	3,170,305	206,662	1,142,754	1,065,621	4,313,059
1973	970,828	3,835,173	255,870	1,535,201	1,226,698	5,370,374
1974	942,797	4,016,879	306,507	1,900,106	1,249,304	5,916,985
1975	989,280	5,018,402	327,349	2,242,606	1,316,629	7,261,008
1976	946,488	5,241,970	344,975	2,512,118	1,291,463	7,754,088
1977	991,398	5,795,552	353,561	2,750,341	1,344,959	8,545,893
1978	988,890	6,383,020	377,654	3,266,505	1,366,544	9,649,525

19.6 Retail sales of new motor vehicles by type and source, 1971-78

Year	Passenger cars		Trucks and buses		Total	
	Canadian/US	Overseas	Canadian/US	Overseas	Canadian/US	Overseas
<i>Number</i>						
1971	592,319	188,443	147,001	12,569	739,320	201,012
1972	653,933	205,026	189,577	17,085	843,510	222,111
1973	782,914	187,914	235,449	20,421	1,018,363	208,335
1974	796,840	145,957	287,686	18,821	1,084,526	164,778
1975	835,679	153,601	310,590	16,759	1,146,269	170,360
1976	793,201	153,287	331,027	13,948	1,124,228	167,235
1977	797,752	193,646	337,914	15,647	1,135,666	209,293
1978	815,994	172,896	364,241	13,413	1,180,235	186,309
<i>Thousand dollars</i>						
1971	2,225,121	512,395	779,544	35,991	3,004,665	548,386
1972	2,554,779	615,526	1,087,306	55,448	3,642,085	670,974
1973	3,197,173	638,000	1,466,448	68,753	4,663,621	706,753
1974	3,455,140	561,739	1,831,532	68,574	5,286,672	630,313
1975	4,350,220	668,182	2,174,855	67,751	6,525,075	735,933
1976	4,522,723	719,247	2,447,109	65,009	6,969,832	784,256
1977	4,864,157	931,395	2,673,007	77,264	7,537,234	1,008,659
1978	5,381,914	1,001,106	3,188,109	78,396	8,570,023	1,079,502

19.7 Retail sales in campus book stores, academic years 1974-75 to 1977-78

Province and items sold	1974-75 \$'000	1975-76 \$'000	1976-77 \$'000	1977-78 \$'000	Percentage change 1976-77 to 1977-78
Province					
Atlantic region	4,762	5,522	5,997	6,135	+2.3
Nova Scotia	2,069	2,407	2,532	2,564	+1.3
New Brunswick	1,531	1,760	1,914	2,016	+5.3
Quebec	11,208	12,846	14,084	18,480	+31.2
Ontario	27,340	32,873	36,901	40,128	+8.7
Manitoba	3,505	3,925	4,531	4,896	+8.1
Saskatchewan	2,475	2,636	3,430	3,866	+12.7
Alberta	6,305	7,986	8,858	9,969	+12.5
British Columbia	5,711	7,542	8,211	9,258	+12.8
Total	61,306	73,330	82,012	92,731	+13.1
Items sold					
Textbooks ¹	39,847	45,305	51,147	58,050	+13.5
Trade books ²	6,259	9,345	10,110	11,684	+15.6
Stationery and supplies	9,571	12,526	13,008	14,740	+13.3
Miscellaneous ³	5,629	6,154	7,747	8,257	+6.6

¹Includes all professional and educational books.²Includes hard covers and paperbacks.³Includes newspapers, magazines, periodicals and sundries.**19.8 Vending machine operators, 1970-77**

Year	Firms No.	Annual change %	Machines ¹ No.	Annual change %	Sales \$'000	Annual change %
1970	768	...	103,751	+2.8	156,822.1	+9.7
1971	697	-9.2	97,965	-5.6	162,249.1	+3.5
1972 ²	692	-0.7	106,758	+9.0	178,909.0	+10.3
1973	648	-6.4	104,253	-2.3	207,081.4	+15.7
1974	667	+2.9	106,278	+1.9	227,445.2	+9.8
1975	627	-6.0	110,287	+3.8	249,959.6	+9.9
1976	612	-2.4	104,548	-5.2	269,386.6	+7.8
1977	622	+1.6	105,587	+1.0	286,478.1	+6.3

¹Maximum during the year; ovens, coin and bill changers are excluded.²Beginning 1972, data of small operators excluded.**19.9 Sales through vending machines, distribution and percentage change, by selected type of machine, 1976 and 1977**

Type of machine	1976 \$'000	%	1977 \$'000	%	Percentage change 1976-77
Cigarettes	120,835.2	44.9	122,306.8	42.7	+1.2
Beverages					
Coffee	45,124.9	16.8	52,407.1	18.3	+16.1
Soft drinks					
Can or bottle	21,136.7	7.8	25,305.0	8.8	+19.7
Disposable cups	19,435.8	7.2	18,872.6	6.6	-2.9
Packaged milk	9,036.9	3.4	10,244.3	3.6	+13.4
Other beverages	553.7	0.2	450.4	0.2	-18.7
Confections and foods					
Bulk confectionery	3,499.6	1.3	4,125.3	1.4	+17.9
Packaged confectionery	15,142.7	5.6	14,288.2	5.0	-5.6
Pastries	9,020.9	3.3	8,309.1	2.9	-7.9
Snack food	2,956.4	1.1	3,534.2	1.2	+19.5
Hot canned foods and soups	4,482.5	1.7	4,613.1	1.6	+2.9
Ice cream	928.8	0.3	879.8	0.3	-5.3
Fresh food (casseroles, hot dogs, sandwiches, salads)	15,766.0	5.9	20,053.7	7.0	+27.2
Other vending machines for food	923.9	0.3	502.0	0.2	-45.7
All other food and non-food	542.6	0.2	586.4	0.2	+8.1
Total	269,386.6	100.0	286,478.1	100.0	+6.3

19.10 Direct sales by commodity, 1974-77

Commodity	1974 \$'000	1975 \$'000	1976 ^r \$'000	1977 \$'000	Percentage change 1976-77
Meat, fish and poultry	15,658	16,754	18,655	16,210	-13.1
Frozen food plans	30,701	27,220	21,580	14,147	-34.4
Dairy products	203,716	225,500	246,600	254,200	+3.1
Bakery products	46,763	49,570 ^r	52,700	55,850	+6.0
All other foods and beverages	42,584	43,685	44,105	46,471	+5.4
Canvas, awnings, sails and tents	6,967	8,305	8,201	5,738	-30.0
Clothing	11,362	12,123	15,516	16,503	+6.4
Fur goods	9,818	11,713	15,409	14,947	-3.0
Furniture, re-upholstery and repairs	51,000	55,000	54,700	58,900	+7.7
Books	82,889	90,909	120,010	134,423	+12.0
Newspapers	153,528	174,955	193,500	200,500	+3.6
Magazines	20,839	22,452	27,250	29,986	+10.0
Aluminum windows, doors, screens and awnings	24,109	27,220	31,632	33,277	+5.2
Dinnerware, kitchenware and utensils	49,806	67,981	92,007	104,315	+13.4
Sailboats and pleasure craft	12,568	15,718	16,412	10,987	-33.1
Household electrical appliances	103,519	120,929	139,015	155,021	+11.5
General merchandise ¹	22,200	16,800	21,949	27,060	+23.3
Brushes, brooms, mops and household soaps and cleaners	31,331	36,115	38,110	41,071	+7.8
Cosmetics and costume jewellery	123,758	124,925	149,912	172,515	+15.1
Phonograph records	26,352	18,845	13,250	11,601	-12.4
Greenhouse flowers, nursery seeds and stocks	49,389	62,158	75,872	88,253	+16.3
Miscellaneous	111,358 ^r	121,822 ^r	178,141	191,022	+7.2
Total, all commodities	1,230,215	1,350,699 ^r	1,574,526	1,682,997	+6.9

¹Includes leather goods, textiles, stamps, coins and personal stationery and sales of merchandise to credit-card holders of gasoline oil companies.

19.11 Methods of distribution of direct sales, 1976 and 1977

Commodity	By door-to-door canvassing		By mail		From manufacturers' premises		Through other channels ¹	
	1976 ^r %	1977 %	1976 ^r %	1977 %	1976 ^r %	1977 %	1976 ^r %	1977 %
Meat, fish and poultry	—	—	—	—	87.1	88.0	12.9	12.0
Frozen food plans	—	—	—	—	100.0	100.0	—	—
Dairy products	100.0	100.0	—	—	—	—	—	—
Bakery products	100.0	100.0	—	—	—	—	—	—
All other foods and beverages	54.2	48.9	—	—	1.9	1.8	43.9	49.3
Canvas, awnings, sails and tents	12.6	15.6	1.9	—	85.5	84.4	—	—
Clothing	14.4	24.1	41.0	36.2	44.6	39.7	—	—
Fur goods	—	—	—	—	100.0	100.0	—	—
Furniture, re-upholstery and repairs	—	—	—	—	100.0	100.0	—	—
Books	32.8	27.9	67.2	72.1	—	—	—	—
Newspapers	87.4	88.5	7.4	6.3	0.5	0.5	4.7	4.7
Magazines	—	—	100.0	100.0	—	—	—	—
Aluminum windows, doors, screens and awnings	51.3	49.7	—	—	48.7	50.3	—	—
Dinnerware, kitchenware and utensils	100.0	100.0	—	—	—	—	—	—
Sailboats and pleasure craft	—	—	—	—	100.0	100.0	—	—
Household electrical appliances	86.6	86.4	—	—	13.4	13.6	—	—
General merchandise	—	—	100.0	100.0	—	—	—	—
Brushes, brooms, mops and household soaps and cleaners	100.0	100.0	—	—	—	—	—	—
Cosmetics and costume jewellery	93.0	93.9	6.1	5.3	0.9	0.8	—	—
Phonograph records	—	—	100.0	100.0	—	—	—	—
Greenhouse flowers, nursery seeds and stocks	—	—	10.7	11.1	37.6	37.9	51.7	51.0
Miscellaneous	21.2	18.5	28.0	42.3	49.0	32.8	1.8	6.4
Total, all commodities	62.2	62.1	14.7	16.9	18.5	15.6	4.6	5.4

¹Includes roadside stands, market stalls, shows, exhibitions and other display and demonstration venues.

19.12 Sales finance companies' new paper purchased and balances outstanding, by class of goods, 1976-78 (million dollars)

Class of goods	Paper purchased			Balances outstanding Dec. 31		
	1976	1977	1978P	1976	1977	1978P
Consumer goods	1,074	1,029	1,212	1,134	1,086	1,177
New passenger cars	534	492	580	630	600	865
Used passenger cars	192	175	203	204	194	
Radio and television sets, household appliances, furniture and other consumer goods	348	362	429	300	292	312
Commercial and industrial goods	1,730	1,849	2,230	2,258	2,376	2,725
New commercial vehicles	899	964	1,169	1,201	1,255	1,643
Used commercial vehicles	121	122	141	151	148	
Other commercial goods	710	763	920	906	973	1,082
Total	2,804	2,878	3,442	3,392	3,462	3,902

19.13 Consumer credit balances outstanding, selected holders and selected years, 1955-78 (million dollars)

Item	1955	1960	1965	1970	1975	1978
Instalment financing by sales finance and consumer loan companies ¹	616	886	1,198	1,136	1,156	1,176
Cash loans						
Under \$1,500	89	392	628	525	252	183
Over \$1,500	173	100	348	1,190	1,504	1,488
Chartered banks	441	857	2,241	4,663	13,175	21,621
Quebec savings banks	2	6	16	22	58	104
Life insurance companies policy loans	250	344	411	759	1,149	1,346
Credit unions and caisses populaires	174	433	813	1,493	3,243	5,468
Department stores	226	368	575	720	1,232	1,538
Furniture, TV, radio and household appliance store loans	175	195	167	148	192	191
Other retail dealers	351	397	571	683	994	1,112
Other credit-card issuers	20	43	72	186	338	391
Public utility companies	..	..	116	181	295	504
Trust and mortgage companies	..	..	..	..	199	639
Total	2,517	4,021	7,157	11,706	23,787	35,762

¹Data for years after 1970 show principal amount outstanding only, excluding unearned interest and other finance charges.

19.14 Summary statistics of major traveller accommodation groups, 1976 and 1977

Year and accommodation group	Locations No.	Rooms No.	Cabins and cottages No.	Tent trailer spaces No.	Total receipts \$ '000
1976					
Hotels	5,361	204,044	3,725	2,471	2,462,519
Motels	4,223	79,220	3,639	5,845	362,001
Tourist homes	386	2,668	6	4	3,663
Tourist courts and cabins	2,473	1,012	20,673	8,401	45,254
Outfitters	1,959	1,633	13,677	9,594	60,678
Tent and trailer campgrounds	3,268	451	3,635	312,248	93,611
Total	17,670	289,028	45,355	338,563	3,027,726
1977					
Hotels	5,294	202,006	3,394	2,448	2,692,337
Motels	4,167	79,654	3,431	5,085	389,222
Tourist homes	384	2,630	15	6	3,907
Tourist courts and cabins	2,353	1,077	19,706	7,944	45,872
Outfitters	1,921	1,630	13,446	10,049	68,766
Tent and trailer campgrounds	3,259	558	3,550	311,234	106,024
Total	17,378	287,555	43,556	336,766	3,306,128

19.15 Locations and receipts of major traveller accommodation groups, by province, 1976 and 1977

Year and province or territory	Hotels		Motels		Total receipts ¹	
	Locations No.	Receipts \$ '000	Locations No.	Receipts \$ '000	\$ '000	% distribu- tion
1976						
Newfoundland	84	30,134	40	7,257	40,159	1.3
Prince Edward Island	28	7,396	58	3,224	13,813	0.5
Nova Scotia	96	43,200	164	15,843	63,054	2.1
New Brunswick	69	27,195	183	19,595	50,426	1.7
Quebec	1,860	532,008	758	65,486	632,779	20.9
Ontario	1,256	714,080	1,489	111,644	911,853	30.1
Manitoba	286	161,632	116	11,010	181,194	6.0
Saskatchewan	496	142,002	153	17,210	169,456	5.6
Alberta	495	355,599	345	42,965	407,243	13.5
British Columbia	630	423,525	880	63,799	512,531	16.9
Yukon	41	14,572	22	2,219	17,447	0.6
Northwest Territories	20	11,176	15	1,749	16,871	0.6
Canada	5,361	2,462,519	4,223	362,001	3,027,726 ²	100.0
1977						
Newfoundland	87	32,406	37	6,216	41,718	1.3
Prince Edward Island	26	8,006	60	3,003	13,515	0.4
Nova Scotia	98	47,273	161	16,839	68,663 ¹	2.1
New Brunswick	73	30,720	175	20,688	55,101	1.7
Quebec	1,835	557,695	744	71,172	670,050	20.3
Ontario	1,227	784,753	1,475	121,406	1,003,360	30.4
Manitoba	291	181,024	119	11,918	202,720	6.2
Saskatchewan	490	155,609	148	17,496	184,773	5.6
Alberta	505	413,037	343	47,534	469,065	14.2
British Columbia	601	453,624	875	68,978	548,690	16.6
Yukon	40	15,506	16	1,981	18,314	0.6
Northwest Territories	21	12,684	14	1,991	18,714	0.6
Canada	5,294	2,692,337	4,167	389,222	3,306,128 ²	100.0

¹Includes tourist homes, tourist courts and cabins, outfitters, and tent and trailer campgrounds.²Components do not add to totals because there is no provincial breakdown for federal campgrounds.**19.16 Restaurant, caterer and tavern receipts, by province, 1976 and 1977**

Year and province	Receipts \$ '000	Establishments No.
1976¹		
Newfoundland	92,502	791
Prince Edward Island	23,063	159
Nova Scotia	150,664	980
New Brunswick	114,057	854
Quebec	1,563,254	11,241
Ontario	1,880,770	9,803
Manitoba	208,908	1,053
Saskatchewan	164,902	897
Alberta	492,428	1,849
British Columbia	708,333	3,371
Yukon and Northwest Territories	10,614	59
Canada	5,409,495	31,057
1977		
Newfoundland	101,259	737
Prince Edward Island	22,010	153
Nova Scotia	164,590	916
New Brunswick	122,014	874
Quebec	1,692,822	10,721
Ontario	2,115,243	9,884
Manitoba	242,085	1,132
Saskatchewan	179,620	952
Alberta	539,091	1,885
British Columbia	760,370	3,426
Yukon and Northwest Territories	14,838	64
Canada	5,953,942	30,744

19.17 Billings of advertising agencies 1975-77 (thousand dollars)

Type of medium or service	1975	1976	1977
Media billings			
Print media	228,617	271,297	308,101
Television	248,167	341,848	373,262
Radio	77,361	111,125	116,335
Outdoor and transportation	16,204	25,008	29,617
Total, media billings	570,349	749,278	827,315
Production cost			
Print media	49,901	49,731	58,969
Television	40,892	52,867	57,456
Radio	6,916	9,270	10,615
Outdoor and transportation	2,380	2,093	4,237
Direct mail	20,132	24,107	31,890
Other	6,470	3,628	4,476
Total, production cost	126,691	141,696	167,643
Total, advertising billings	697,041	890,974	994,958
Research			
Market surveys	24,096	25,214	31,053
Total, gross billings	721,137	916,188	1,026,011

19.18 Sales of wholesale merchants, by kind of business, 1976-78

Kind of business	1976 \$'000,000	1977 \$'000,000	1978 \$'000,000	Per- centage change 1977-78
Consumer goods trades	23,374.0	25,549.8	28,298.1	+10.8
Automotive parts and accessories	3,197.1	3,328.4	3,572.9	+7.3
Motor vehicles	941.5	1,218.2	1,335.2	+9.6
Drugs and drug sundries	1,023.8	1,088.0	1,194.4	+9.8
Clothing and furnishings	473.9	505.4	529.9	+4.9
Footwear	100.3	113.7	124.7	+9.7
Other textiles and clothing accessories	991.4	988.2	1,080.7	+9.4
Household electrical appliances	1,057.7	1,072.8	1,113.7	+3.8
Tobacco, confectionery and soft drinks	2,198.2	2,769.5	3,097.5	+11.8
Fresh fruits and vegetables	825.8	933.2	1,064.5	+14.1
Meat and dairy products	1,119.9	1,195.7	1,452.3	+21.5
Floor coverings	443.6	464.8	506.7	+9.0
Groceries and food specialties	7,394.4	8,000.6	9,061.5	+13.3
Hardware	1,080.1	1,141.0	1,225.3	+7.4
Other consumer goods	2,526.1	2,730.2	2,938.5	+7.6
Industrial goods trades	26,613.4	30,025.8	33,724.5	+12.3
Coal and coke	69.9	77.6	98.2	+26.6
Grain	4,440.1	6,104.7	5,430.0	-11.1
Electrical wiring supplies, construction materials, apparatus and equipment	863.6	934.7	952.0	+1.9
Other construction materials and supplies, including lumber	6,549.0	6,926.1	7,967.6	+15.0
Farm machinery	2,300.1	2,193.4	2,882.7	+31.4
Industrial and transportation equipment and supplies	4,753.7	5,311.0	6,214.2	+17.0
Commercial, institutional and service equipment and supplies	1,063.5	1,135.9	1,283.5	+13.0
Newsprint, paper and paper products	791.5	908.5	1,057.0	+16.3
Scientific and professional equipment and supplies	572.9	633.7	722.5	+14.0
Iron and steel	1,765.0	1,994.7	2,592.6	+30.0
Junk and scrap	671.5	675.2	892.2	+32.2
Other industrial goods	2,772.7	3,130.5	3,631.9	+16.0
Total, all trades	49,987.5	55,575.6	62,022.6	+11.6

19.19 Sales of farm implements and equipment, by province and by major group, 1974-77

Province and major group	1974 \$'000	1975 \$'000	1976 \$'000	1977 \$'000
Province				
Atlantic provinces	17,918	23,062	27,693	27,746
Quebec	84,821	108,559	125,785	135,623
Ontario	173,663	214,763	239,973	255,913
Manitoba	76,839	106,442	125,373	115,916
Saskatchewan	175,653	262,116	315,518	285,130
Alberta	163,604	226,734	268,054	270,541
British Columbia	21,199	24,623	31,689	33,687
Total	713,696	966,299	1,134,086	1,124,556

19.19 Sales of farm implements and equipment, by province and by major group, 1974-77 (concluded)

Province and major group	1974 \$'000	1975 \$'000	1976 \$'000	1977 \$'000
Major group				
Tractors — farm use	256,573	373,341	449,266	430,637
Ploughs	16,550	23,448	31,216	28,482
Tilling, cultivating and weeding machinery	56,414	80,530	97,700	99,013
Planting, seeding and fertilizing machinery	31,106	39,467	53,416	56,232
Haying machinery	49,444	64,987	72,079	62,778
Harvesting machinery	126,162	181,765	225,496	245,233
Machines for preparing crops for market or for use	43,166	50,399	43,491	45,507
Farm wagons, boxes and sleighs	29,101	35,639	32,010	25,902
Barn equipment	30,501	30,324	31,577	31,230
Farm dairy machinery and equipment	16,120	18,973	13,314	13,244
Spraying and dusting equipment	6,540	10,270	11,911	8,619
Pump and irrigation equipment and miscellaneous farm equipment	52,019	57,156	72,610	77,679

19.20 New construction machinery and equipment sales, by commodity group, 1976 and 1977

Commodity group	1976		1977	
	Units No.	Value \$'000	Units No.	Value \$'000
Tractors, crawler-type	2,629	166,130	2,351	172,852
Tractors, wheel-type	1,812	45,443	1,624	44,033
Skid-steer loaders	473	4,474	406	3,984
Front-end loaders, wheel-type	1,908	159,405	1,885	167,816
Attachments for tractors and front-end loaders	1,815	11,925	1,548	15,222
Scrapers	159	25,152	176	32,358
Off-highway haulers, heavy duty	254	59,739	323	79,392
Excavator/cranes, crawler mounted	822	105,926	573	84,380
Excavator/cranes, rubber tire mounted	1,068	53,861	985	42,195
Excavator/crane attachments	¹	¹	¹	¹
Tower and climbing cranes	¹	¹	¹	¹
Trenchers and ditchers	277	3,960	314	4,958
Graders, motor	722	50,779	785	62,140
Logging skidders	923	38,760	1,132	50,770
Compactors and rollers, vibratory, hand-guided	1,872	3,615	1,936	3,777
Compactors, vibratory	335	10,222	424	10,919
Compactors and rollers, static, self-propelled	170	3,790	217	3,290
Air compressors	828	14,806	952	15,321
Rock drills	787	18,292	619	16,362
Pumps, contractors' type	12,418	12,213	10,484	11,212
Contractors' tools, hand-held	2,775	2,266	2,335	2,128
Concrete machinery	2,077	14,369	2,135	16,309
Asphalt equipment	290	16,427	328	16,394
Aggregate processing equipment	...	37,559	...	35,424
Forklift trucks	1,696	38,786	1,457	42,592
All other construction type machinery and attachments	...	99,188	...	84,326
All repair and consumable parts	...	566,074	...	619,050
Total	...	1,564,119	...	1,638,440

¹Confidential.**19.21 Sales of diesel engines, by province, 1974-77**

Province	Units ¹			
	1974	1975	1976	1977
Atlantic provinces	2,031	1,720	1,408	1,338
Quebec	5,456	4,243	3,291	3,273
Ontario	6,530	4,834	4,177	4,747
Manitoba	1,064	1,013	1,086	1,097
Saskatchewan	1,249	1,339	1,524	1,365
Alberta	3,798	2,692	3,083	3,754
British Columbia	4,387	3,487	3,632	4,007
Total	24,515	39,328	18,201	19,581

¹Horsepower range 0-100 to 401 and over.

19.22 Summary statistics of co-operative marketing and purchasing associations, by province, 1974-78

Year and province		Associations	Shareholders or members	Farm marketings \$ '000	Sales of merchandise \$ '000	Total business ¹ \$ '000
1974		1,123	1,546,000	3,142,800	1,550,000	4,769,600
1975		1,144	1,633,000	3,363,400	1,910,900	5,362,200
1976 ^r		1,164	1,736,300	3,745,500	2,162,300	6,001,500
1977		1,158	1,791,000	3,817,300	2,377,200	6,303,300
1978		1,142	1,898,100	4,480,200	2,685,000	7,428,700
Newfoundland	1974	35	17,000	3,300	27,400	31,300
	1975	40	19,000	4,600	31,600	37,100
	1976	35	19,400	5,800	32,900 ^r	39,800 ^r
	1977	35	19,000	6,400	36,800	43,900
	1978	31	18,900	6,800	38,500	46,400
Prince Edward Island	1974	16	10,000	5,200	15,900	21,600
	1975	18	10,000	7,600	19,000	27,100
	1976	20	9,800	8,400	19,500	28,400
	1977	22	10,000	8,700	19,700	29,000
	1978	22	10,100	9,600	23,300	33,600
Nova Scotia	1974	83	34,000	89,800	58,700	151,000
	1975	82	36,000	107,400	65,800	176,900
	1976	81	36,800	105,000 ^r	79,000 ^r	188,100
	1977	77	35,000	106,500	88,500	199,100
	1978	80	37,400	114,400	101,500	219,600
New Brunswick	1974	40	20,000	16,400	36,400	54,100
	1975	43	26,000	18,200	49,500	69,800
	1976	47	28,800	22,600	55,700	80,400 ^r
	1977	50	29,000	22,000	63,600	88,400
	1978	50	29,000	9,700	60,900	72,100
Quebec	1974	381	194,000	348,000	379,500	742,000
	1975	387	193,000	530,500	431,000	983,700
	1976 ^r	403	222,000	580,800	467,100	1,064,800
	1977	394	228,000	648,700	499,500	1,168,100
	1978	405	253,900	699,600	565,800	1,283,400
Ontario	1974	97	95,000	164,500	219,400	390,000
	1975	95	101,000	194,400	247,200	448,900
	1976	90	107,000	229,400 ^r	267,000 ^r	505,400
	1977	91	108,000	228,700	300,700	538,600
	1978	94	111,100	230,100	332,400	571,600
Manitoba	1974	71	190,000	126,300	109,900	258,300
	1975	79	199,000	124,300	142,100	286,700
	1976 ^r	79	199,300	93,200	167,700	283,700
	1977	81	208,000	122,200	185,800	333,100
	1978	77	198,300	353,600	230,400	620,700
Saskatchewan	1974	226	400,000	1,230,400	240,900	1,487,200
	1975	209	386,000	1,230,900	300,300	1,545,600
	1976	213 ^r	395,000	1,383,200	353,100	1,754,500
	1977	216	398,000	1,267,700	394,100	1,682,200
	1978	206	390,400	1,308,200	456,800	1,830,500
Alberta	1974	105	346,000	619,800	251,200	877,400
	1975	117	391,000	636,400	332,900	977,300
	1976	124 ^r	423,000 ^r	757,900	396,200	1,164,800
	1977	115	440,000	730,100	463,800	1,207,900
	1978	109	544,000	773,700	543,400	1,371,700
British Columbia	1974	64	76,000	186,600	102,100	294,600
	1975	69	85,000	213,000	126,400	347,000
	1976	67	92,000	238,400	138,200	383,300 ^r
	1977	72	119,000	255,900	163,600	430,300
	1978	66	142,000	335,400	189,600	533,900
Interprovincial	1974	5	164,000	352,500	108,600	462,000
	1975	5	187,000	296,100	165,200	462,100
	1976	5	203,200	320,800	185,900	508,300
	1977	5	197,000	420,400	161,100	582,700
	1978	2	163,000	639,100	142,400	845,200

¹Includes service revenue and other income.

19.23 Sales of products handled by marketing and purchasing co-operatives, 1975-78 (thousand dollars)

Product	1975	1976	1977	1978
Marketing	3,363,400	3,740,400	3,817,300	4,480,200
Dairy products	916,300	1,001,200	1,101,300	1,183,700
Fruits and vegetables	76,700	86,000	93,500	118,700
Grains and seeds	1,921,500	2,127,300	2,134,700	2,519,600
Livestock and livestock products	293,800	334,500	303,100	473,300
Eggs and poultry	107,200	129,800	135,800	137,700
Miscellaneous	47,900	61,600	48,900	47,200

19.23 Sales of products handled by marketing and purchasing co-operatives, 1975-78 (thousand dollars) (concluded)

Product	1975	1976	1977	1978
Purchasing	1,910,900	2,157,200	2,377,200	2,685,000
Food products	524,800	595,900	721,600	813,800
Clothing, home furnishings and other consumer goods	171,400 ^r	194,400 ^r	208,300	224,600
Farm supplies	142,000 ^r	158,000 ^r	172,100	224,100
Petroleum products	269,000	338,600	385,900	433,200
Feed	360,800	363,500	374,600	403,400
Fertilizer and spray material	193,400	207,300	220,100	266,849
Machinery and equipment	138,000	159,100	135,800	143,200
Building material	98,500	126,900	151,000	163,500
Miscellaneous	13,000 ^r	13,500 ^r	7,800	12,400
Total	5,274,300	5,897,600	6,194,500	7,165,200

19.24 Value and volume of sales of alcoholic beverages, years ended Mar. 31, 1977 and 1978

Province or territory	Spirits		Wines		Beer		Total	
	1977	1978	1977	1978	1977	1978	1977	1978
Value \$'000								
Nfld.	38,154	40,687	4,803	5,005	54,537	57,969	97,494	103,661
PEI	10,858	12,260	1,330	1,683	8,088	8,845	20,276	22,788
NS	67,812	75,268	12,088	13,711	55,777	63,120	135,677	152,099
NB	43,883	40,396	8,234	8,076	47,541	47,507	99,658	95,979
Que.	314,244	338,822	146,203	171,063	376,804	403,605	837,251	913,490
Ont.	666,711	705,030	162,749	191,663	495,740	534,361	1,325,200	1,431,054
Man.	90,594	94,811	14,544	17,190	66,682	69,218	171,820	181,219
Sask.	84,068	89,708	9,348	11,419	57,923	62,880	151,339	164,007
Alta.	198,718	221,904	36,226	45,506	123,045	138,443	357,989	405,853
BC	247,550	262,277	74,213	86,031	149,639	175,013	471,402	523,321
YT	3,939	4,349	1,029	1,169	3,182	3,389	8,150	8,907
NWT	5,826	6,319	970	1,111	4,485	4,721	11,281	12,151
Canada	1,772,357	1,891,831	471,737	553,627	1,443,443	1,569,071	3,687,537	4,014,529
Volume litres								
Nfld.	3 691	3 837	1 237	1 273	46 279	47 588	51 207	52 697
PEI	1 091	1 150	382	464	7 697	8 396	9 170	10 010
NS	6 796	7 051	3 714	3 928	57 885	61 498	68 395	72 477
NB	4 487	3 923	2 668	2 255	48 025	44 833	55 180	51 011
Que.	33 323	34 081	44 502	48 365	601 648	594 403	679 473	676 849
Ont.	73 046	73 877	51 753	58 625	696 415	720 473	821 214	852 975
Man.	9 528	9 656	5 487	6 042	82 562	82 464	97 577	98 162
Sask.	8 738	9 010	3 519	4 087	64 595	62 226	76 852	75 323
Alta.	20 217	21 489	13 174	14 879	146 707	153 050	180 098	189 418
BC	25 345	26 790	24 103	28 126	198 364	222 759	247 812	277 674
YT	327	350	236	254	2 960	2 909	3 523	3 514
NWT	459	486	218	259	3 355	3 373	4 032	4 119
Canada	187 048	191 700	150 993	168 556	1 956 492	2 003 972	2 294 533	2 364 229

19.25 Revenue of all governments¹ specifically derived from the control, taxation and sale of alcoholic beverages, years ended Mar. 31, 1974-78 (thousand dollars)

Government	1974	1975	1976	1977	1978
Government of Canada	554,177	613,709	640,696	657,285	690,057
Provincial and territorial governments					
Newfoundland	24,461	28,428	30,132	34,580	35,858
Prince Edward Island	5,874	6,698	7,793	7,396	7,982
Nova Scotia	37,529	42,618	46,906	49,858	56,691
New Brunswick	26,373	29,604	33,538	34,903	33,860
Quebec	164,920	184,798	204,851	227,996	240,196
Ontario	282,394	309,234	335,121	393,512	426,798
Manitoba	41,236	46,379	52,291	62,352	66,412
Saskatchewan	41,610	50,376	49,427	54,287	60,227
Alberta	84,204	94,750	107,338	119,770	137,431
British Columbia	108,870	120,643	150,274	163,200	178,754
Total, provincial governments	817,471	913,528	1,017,671	1,147,854	1,244,209
Yukon	2,542	2,743	3,130	3,008	3,328
Northwest Territories	3,752	4,664	4,477	4,429	4,419
Total, provincial and territorial governments	823,765	920,935	1,025,278	1,155,291	1,251,956
Total, all governments	1,377,942	1,534,644	1,665,974	1,812,576	1,942,013

¹Revenue of the Government of Canada comprises excise duties, excise taxes, import duties and certain fees and licences. Revenue of provinces and territories includes revenue collected directly by the provincial and territorial governments as well as revenue of liquor authorities but excludes revenue resulting from general retail sales taxation.

19.26 Total imports, exports and trade balance, Canada, 1958-78

Year	Imports		Exports		Trade balance \$'000,000	Ratio of exports to imports %
	\$'000,000	Percentage change over previous year	\$'000,000	Percentage change over previous year		
1958	5,060	-7.8	4,899	0.1	-161	96.8
1959	5,530	9.3	5,144	5.1	-386	93.0
1960	5,495	-0.6	5,390	4.8	-105	98.2
1961	5,781	5.2	5,903	9.5	122	102.1
1962	6,294	8.9	6,357	7.7	63	101.0
1963	6,578	4.5	6,990	10.0	412	106.3
1964	7,488	13.8	8,303	18.8	815	110.9
1965	8,633	15.3	8,767	5.6	134	101.6
1966	10,072	16.7	10,325	17.8	253	102.5
1967	10,873	8.0	11,420	10.6	547	105.0
1968	12,360	13.7	13,679	19.8	1,319	110.7
1969	14,130	14.3	14,871	8.7	741	105.2
1970	13,952	-1.3	16,820	13.1	2,868	120.6
1971	15,617	11.9	17,820	5.9	2,203	114.1
1972	18,668	19.5	20,150	13.1	1,482	107.9
1973	23,325	24.9	25,421	26.2	2,096	109.0
1974	31,722	36.0	32,442	27.6	720	102.3
1975 ^r	34,716	9.4	33,328	2.7	-1,388	96.0
1976 ^r	37,494	8.0	38,475	15.4	981	102.6
1977 ^r	42,332	12.9	44,554	15.8	2,222	105.2
1978	49,938	18.0	52,842	18.6	2,904	105.8

19.27 Imports¹ into Canada from all countries, by section and selected commodities, 1974-78 and percentage of 1978 total (million dollars)

Section and commodity	1974	1975	1976 ^r	1977 ^r	1978	% of 1978 total
LIVE ANIMALS	112	75	109	52	80	0.2
FOOD, FEED, BEVERAGES AND TOBACCO	2,404	2,607	2,762	3,254	3,700	7.4
Meat and fish	314	338	546	534	601	1.2
Fruits and vegetables	693	774	861	1,039	1,255	2.5
Raw sugar	402	459	249	220	201	0.4
Coffee	132	169	250	424	438	0.9
CRUDE MATERIALS, INEDIBLE	4,073	5,086	5,091	5,316	5,892	11.8
Metal ores, concentrates and scrap	397	468	424	527	700	1.4
Coal	303	576	544	618	632	1.3
Crude petroleum	2,646	3,302	3,280	3,215	3,471	7.0
FABRICATED MATERIALS, INEDIBLE	6,482	5,944	6,211	6,993	8,793	17.6
Wood and paper	559	645	736	686	783	1.6
Textiles	817	740	841	890	1,074	2.2
Petroleum and coal products	374	276	220	300	378	0.8
Chemicals	1,537	1,476	1,682	1,992	2,621	5.2
Iron and steel	1,260	937	722	870	1,099	2.2
Non-ferrous metals	608	427	494	530	802	1.6
END PRODUCTS, INEDIBLE	18,362	20,679 ^r	22,826	26,297	31,083	62.2
Industrial machinery	2,720	3,208	3,222	3,494	4,279	8.6
Agricultural machinery and tractors	902	1,220	1,318	1,335	1,508	3.0
Motor vehicles	3,133	3,683	3,976	4,715	5,409	10.8
Motor vehicle parts	3,991	4,553 ^r	5,464	6,861	7,847	15.7
Communications equipment	957	853	1,092	1,252	1,513	3.0
Office machinery	609	659	736	798	1,075	2.2
Apparel	442	534	757	671	734	1.5
SPECIAL TRANSACTIONS — TRADE	289	325	495	421	390	0.8
Total, imports	31,722	34,716 ^r	37,494	42,332	49,938	100.0

¹Includes other commodities not listed.**19.28 Domestic exports¹ from Canada to all countries, by section and selected commodities, 1974-78 and percentage of 1978 total (million dollars)**

Section and commodity	1974	1975 ^r	1976 ^r	1977 ^r	1978	% of 1978 total
LIVE ANIMALS	90	83	134	151	214	0.4
FOOD, FEED, BEVERAGES AND TOBACCO	3,780	4,064	4,161	4,456	5,087	9.8
Meat and fish	562 ^r	615	794	1,015	1,414	2.7
Wheat	2,065	2,023	1,732	1,882	1,913	3.7
CRUDE MATERIALS, INEDIBLE	7,793	7,966	8,288	8,850	8,830	17.0
Metal ores, concentrates and scrap	2,376	2,241	2,512	2,730	2,403	4.6
Crude petroleum	3,420	3,052	2,287	1,751	1,573	3.0
Natural gas	494	1,092	1,616	2,028	2,190	4.2

19.28 Domestic exports¹ from Canada to all countries, by section and selected commodities, 1974-78 and percentage of 1978 total (million dollars) (concluded)

Section and commodity	1974	1975 [†]	1976 [†]	1977 [†]	1978	% of 1978 total
FABRICATED MATERIALS, INEDIBLE	10,696	9,884	12,228	14,927	18,906	36.4
Lumber	1,291	973	1,649	2,387	3,229	6.2
Wood pulp and similar pulp	1,889	1,834	2,186	2,158	2,181	4.2
Newsprint paper	1,726	1,746	2,003	2,382	2,886	5.6
Chemicals	985	1,030	1,385	1,739	2,357	4.5
Petroleum and coal products	611	639	562	649	777	1.5
Iron and steel	756	751	844	1,047	1,427	2.7
Non-ferrous metals	2,005	1,724	2,171	2,496	3,255	6.3
END PRODUCTS, INEDIBLE	9,237	10,473	12,711	15,231	18,766	36.2
Industrial machinery	764	931	893	1,164	1,537	3.0
Agricultural machinery and tractors	398	543	540	559	605	1.2
Motor vehicles	3,742	4,293	5,258	6,805	7,968	15.3
Motor vehicle parts	1,975	2,139	2,967	3,619	4,479	8.6
SPECIAL TRANSACTIONS — TRADE	80	79	130	68	116	0.2
Total, domestic exports	31,676	32,549	37,651	43,684	51,919	100.0
Total, re-exports	767	780	825	870	923	...
Total, exports	32,442	33,328	38,475	44,554	52,842	...

[†]Includes other commodities not listed.

19.29 Imports into Canada from all countries, from the United States and from the European Economic Community (EEC)¹, by section and commodity, 1977 and 1978 (thousand dollars)

Section and commodity	All countries		United States		EEC	
	1977 [†]	1978	1977 [†]	1978	1977 [†]	1978
LIVE ANIMALS	52,154	80,413	49,218	77,637	1,802	1,395
FOOD, FEED, BEVERAGES AND TOBACCO	3,253,587	3,699,994	1,655,021	1,857,954	402,882	485,811
Meat, fresh, chilled or frozen	281,393	314,647	195,000	171,576	253	446
Other meat and meat preparations	32,754	38,636	15,332	18,287	3,818	4,779
Fish and marine animals	219,505	247,893	119,649	140,085	10,406	8,640
Dairy produce, eggs and honey	80,290	96,545	26,679	28,361	35,356	41,221
Indian corn, shelled	61,424	55,546	61,403	55,498	15	39
Other cereals and cereal preparations	110,673	122,154	83,480	92,024	20,237	22,236
Bananas and plantains, fresh	66,619	74,689	364	70	2	—
Grapes, fresh	72,684	80,241	62,244	68,043	1	92
Oranges, mandarins and tangerines, fresh	71,934	87,954	54,317	68,494	18	25
Other fresh fruits and berries	138,827	185,874	126,797	166,110	365	3,082
Fruits, dried or dehydrated	46,421	53,470	24,602	24,037	310	536
Orange juice and concentrates	71,574	113,687	51,279	63,090	1	—
Other fruit juices and concentrates	24,228	37,121	16,892	22,938	1,094	2,671
Fruits and products, canned	61,497	74,222	36,157	38,196	2,850	3,668
Other fruits and fruit preparations	28,321	34,145	10,769	14,212	1,334	1,708
Nuts, except oil nuts	63,263	72,999	30,753	38,630	2,550	2,261
Tomatoes, fresh	58,427	56,073	39,248	43,129	—	1
Other fresh vegetables	211,010	250,487	196,393	237,646	562	910
Other vegetables and vegetable preparations	123,946	133,850	53,016	58,705	12,034	13,261
Raw sugar	219,868	200,624	1	3	—	—
Refined sugar, molasses and syrups	21,418	22,981	13,299	14,027	640	675
Sugar preparations and confectionery	67,368	73,737	24,266	28,830	33,909	35,841
Cocoa and chocolate	108,995	133,202	41,019	35,559	36,845	49,782
Coffee	423,511	437,977	120,941	119,623	24,930	35,400
Tea	73,289	58,464	3,118	2,458	23,564	18,625
Other foods and materials for foods	145,599	175,763	102,822	119,890	13,588	16,789
Oilseed cake and meal	90,690	103,276	90,686	103,245	—	23
Other fodder and feed	32,470	42,392	30,789	40,469	741	976
Distilled alcoholic beverages	87,407	107,371	6,101	8,196	64,116	77,936
Other beverages	136,172	187,639	6,063	22,918	107,709	137,390
Tobacco	22,012	26,335	11,543	13,604	5,635	6,800
CRUDE MATERIALS, INEDIBLE	5,315,714	5,891,543	1,814,275	2,344,265	106,500	95,338
Fur skins, undressed	80,733	91,157	54,173	62,428	16,914	20,568
Other crude animal products	46,426	56,308	35,767	47,906	2,107	1,420
Soybeans	98,953	91,245	98,942	91,219	3	—
Other oilseeds, oil nuts and oil kernels	48,168	62,791	45,750	59,949	458	233
Rubber and allied gums, natural	79,777	86,713	7,144	8,532	207	116
Other crude vegetable products	95,145	104,947	72,827	81,182	14,863	13,010
Crude wood materials	67,425	89,702	67,329	87,288	9	—
Wool and fine animal hair	36,080	41,453	3,714	3,579	16,486	13,423
Cotton	82,417	91,236	73,441	78,831	97	79
Man-made fibres	58,207	67,548	50,911	59,284	5,195	5,109
Other textile fibres	3,970	3,492	1,245	1,032	317	355

19.29 Imports into Canada from all countries, from the United States and from the European Economic Council (EEC)¹, by section and commodity, 1977 and 1978 (thousand dollars)
(continued)

Section and commodity	All countries		United States		EEC	
	1977 ²	1978	1977 ²	1978	1977 ²	1978
CRUDE MATERIALS, INEDIBLE (concluded)						
Iron ores and concentrates	76,274	167,650	64,596	142,761	59	—
Scrap iron and steel	29,734	56,195	29,698	56,088	20	62
Aluminum ores, concentrates and scrap	191,124	267,090	21,413	52,169	19,592	22,889
Other metals in ores, concentrates and scrap	229,573	208,897	95,270	87,971	9,167	8,141
Coal	617,663	632,441	615,837	632,435	—	5
Crude petroleum	3,215,267	3,471,138	283,875	527,897	13,053	2
Other crude bituminous substances	43,470	3,221	957	1,210	76	118
Abrasives, natural	13,599	17,809	10,729	13,499	2,657	4,080
Phosphate rock	59,147	76,468	58,134	76,202	—	—
Other crude non-metallic minerals	96,128	127,485	77,364	98,223	3,434	4,529
Other waste and scrap materials	46,435	76,557	45,159	74,580	887	1,197
FABRICATED MATERIALS, INEDIBLE	6,992,825	8,793,005	4,963,274	6,096,973	895,394	1,249,613
Leather and leather fabricated materials	86,158	106,915	54,005	54,637	16,461	17,698
Rubber fabricated materials	87,880	112,627	73,147	94,407	8,005	10,558
Lumber	171,300	202,727	160,792	189,960	62	155
Veneer	16,804	21,275	13,442	17,036	698	599
Plywood and wood building boards	80,602	79,351	30,893	30,517	251	480
Other wood fabricated materials	96,038	107,826	78,766	83,969	2,741	4,175
Wood pulp and similar pulp	34,719	50,107	30,204	38,566	859	—
Paper and paperboard	286,183	321,785	265,428	290,176	13,257	17,657
Cotton yarn and thread	26,594	34,197	12,355	14,972	2,795	2,986
Man-made fibre yarn and thread	113,119	120,629	76,770	87,432	18,435	18,015
Other yarn and thread	35,528	65,295	15,482	17,591	15,836	36,962
Cordage, twine and rope	26,741	25,622	7,394	9,093	2,687	2,833
Broad woven fabrics, wool and hair	30,501	37,160	787	979	16,348	18,938
Broad woven fabrics, cotton	136,199	146,639	63,711	68,316	7,283	9,584
Broad woven fabrics, man-made	97,454	118,753	40,680	46,293	23,451	29,094
Broad woven fabrics, mixed fibres	150,253	203,277	79,454	106,961	25,228	36,717
Other broad woven fabrics	17,407	21,126	1,272	2,433	2,051	3,801
Coated or impregnated fabrics	112,038	136,031	95,203	11,492	8,979	11,695
Other textile fabricated materials	144,007	165,702	95,670	111,564	21,905	25,222
Vegetable oils and fats, except essential oils	82,340	95,252	42,103	54,810	2,622	3,077
Other oils, fats, waxes, extracts and derivatives	65,276	82,662	56,196	67,351	5,412	10,105
Inorganic chemicals	235,996	282,336	178,736	216,834	36,013	49,295
Organic chemicals	493,635	681,954	348,504	403,000	96,215	170,856
Fertilizers and fertilizer materials	67,598	94,551	64,623	91,150	555	773
Synthetic and reclaimed rubber	81,998	93,941	63,325	71,778	11,322	14,578
Plastics materials, not shaped	376,016	483,741	329,828	410,924	37,852	62,624
Plastic film and sheet	124,809	152,908	108,277	131,274	10,229	12,306
Other plastics, basic shapes and forms	80,308	110,932	70,572	96,014	5,062	9,791
Dyestuffs, except dyeing extracts	52,335	76,161	18,422	24,863	27,892	43,088
Pigments, lakes and toners	34,159	49,027	20,968	28,734	10,694	17,406
Paints and related products	64,323	82,796	58,842	74,096	4,220	6,284
Other chemical products	381,185	512,536	333,537	444,962	38,063	57,078
Fuel oil	115,868	147,978	24,053	30,247	1,952	2,370
Lubricating oils and greases	56,877	64,547	48,109	52,951	2,416	3,870
Coke of petroleum and coal	87,465	109,954	79,190	101,573	8,275	8,381
Other petroleum and coal products	39,498	55,866	31,967	43,755	5,031	5,229
Bars and rods, steel	104,878	132,630	32,645	47,163	23,345	35,221
Plate, sheet and strip, steel	270,613	379,840	125,133	182,033	57,171	101,889
Structural shapes, steel and sheet piling	70,930	60,218	25,810	28,847	31,903	24,608
Pipes and tubes, iron and steel	169,606	267,540	103,799	128,794	12,394	19,509
Wire and wire rope, iron and steel	71,002	60,100	18,002	16,903	37,521	29,617
Other iron and steel and alloys	182,835	198,530	118,329	129,414	13,070	15,481
Aluminum, including alloys	205,946	258,911	184,617	218,128	18,003	35,702
Copper and alloys	88,574	101,951	55,923	62,459	22,659	13,696
Nickel and alloys	55,489	54,585	34,669	41,078	8,662	7,165
Precious metals, including alloys	58,946	244,466	50,439	213,608	3,625	9,696
Tin, including alloys	57,122	69,898	44,941	54,645	381	233
Other non-ferrous metals and alloys	64,304	72,131	42,750	52,023	6,068	7,171
Bolts, nuts and screws	152,996	177,091	134,214	154,644	3,872	5,837
Other basic hardware	148,155	230,853	116,695	191,124	10,920	15,203
Chains	31,343	40,188	17,326	20,832	5,724	7,333
Valves	130,222	154,212	92,395	107,354	24,630	29,229
Pipe fittings	76,197	108,564	57,571	69,531	9,446	19,463
Other metal fabricated basic products	196,246	192,048	164,761	164,603	11,712	17,314
Clay bricks, clay tiles and refractories	116,298	124,796	77,151	80,421	25,198	29,180
Sheet and plate glass	54,306	61,608	46,366	52,256	554	1,806
Other glass basic products	65,857	80,056	54,886	64,963	6,045	7,805
Abrasive basic products	51,119	60,606	41,358	46,128	5,845	7,320
Natural and synthetic gem stones	84,121	95,506	12,737	13,044	32,178	39,882
Other non-metallic mineral basic products	102,082	115,219	80,083	87,496	12,778	16,976
Electricity	14,718	1,809	14,718	1,809	—	—
Other fabricated materials, inedible	179,709	195,465	143,245	146,965	20,533	27,999

19.29 Imports into Canada from all countries, from the United States and from the European Economic Community (EEC)¹, by section and commodity, 1977 and 1978 (thousand dollars)
(continued)

Section and commodity	All countries		United States		EEC	
	1977 ²	1978	1977 ²	1978	1977 ²	1978
END PRODUCTS, INEDIBLE	26,296,769	31,083,103	21,059,947	24,626,026	2,163,450	2,739,413
Machinery	4,829,442	5,787,347	3,949,718	4,648,148	586,212	746,297
Engines and turbines, diesel and general purpose	85,123	119,045	58,501	87,679	26,090	29,944
Other engines and turbines, general purpose	129,172	177,136	92,517	120,466	22,962	24,849
Electric generators and motors	178,252	240,778	122,570	171,384	35,748	31,520
Bearings	122,007	152,791	86,723	103,827	15,416	24,117
Other mechanical power transmission equipment	103,842	149,565	85,225	122,871	16,267	23,124
Compressors, blowers and vacuum pumps	109,017	126,442	92,570	98,826	13,829	20,944
Pumps, except oil well pumps	90,108	102,489	72,334	84,647	10,360	10,110
Packaging machinery	70,499	82,571	57,026	61,600	10,601	14,762
Other general purpose industrial machinery	202,968	220,175	153,208	173,590	31,101	37,629
Conveyors and conveying systems	33,649	39,574	26,384	28,258	5,466	8,750
Elevators and escalators	12,117	15,095	10,772	12,577	1,197	1,663
Industrial trucks, tractors, trailers and stackers	100,833	121,706	87,996	102,960	8,366	11,413
Hoisting machinery	108,233	108,055	84,743	82,702	8,721	12,475
Other materials handling equipment	85,088	117,614	74,047	106,463	7,663	7,198
Drilling machinery and drill bits	212,199	301,692	184,479	268,556	8,725	12,031
Power shovels	167,958	157,453	158,348	141,913	6,448	10,017
Bulldozing and similar equipment	23,108	28,432	21,211	26,819	407	384
Front-end loaders	131,141	162,405	118,323	146,616	3,334	4,662
Other excavating machinery	94,129	110,553	86,845	101,733	5,840	7,682
Mining, oil and gas machinery	162,109	186,643	136,851	161,677	17,252	37,984
Construction and maintenance machinery	153,175	183,249	140,465	167,668	9,566	11,393
Machine tools, metalworking	169,400	218,460	116,358	145,978	31,713	38,962
Welding apparatus and equipment	46,489	52,590	43,200	47,404	2,248	3,429
Rolling mill machinery	29,301	46,124	18,543	21,281	9,926	21,764
Other metalworking machinery	146,642	159,059	119,821	120,004	18,149	28,205
Pulp and paper industries machinery	80,718	84,928	57,645	62,426	7,411	13,307
Printing presses	56,516	61,310	39,224	41,236	13,784	16,187
Other printing machinery and equipment	80,287	90,991	66,803	74,715	10,217	11,835
Spinning, weaving and knitting machinery	35,436	47,415	19,921	24,815	10,528	16,934
Other textile industries machinery	55,326	72,704	35,007	42,260	15,114	22,772
Food, beverages and tobacco industries machinery	84,501	120,828	58,036	74,461	22,809	38,724
Plastics and chemical industry machinery	92,307	112,258	67,618	76,486	17,500	22,522
Other special industry machinery	242,848	309,265	176,667	218,252	45,570	59,755
Soil preparation, seeding and fertilizing machinery	121,136	118,088	111,859	108,229	4,433	5,222
Combine reaper-threshers	129,233	181,893	126,076	177,475	2,481	3,614
Other haying and harvesting machinery	118,869	113,146	114,903	109,119	3,024	3,374
Other agricultural machinery and equipment	162,045	186,210	152,101	173,531	8,081	9,601
Wheel tractors, new	425,049	441,696	340,246	353,758	74,586	70,331
Track-laying tractors and used tractors	124,106	177,113	108,008	159,307	2,046	718
Tractor engines and tractor parts	254,506	289,802	226,563	264,578	21,233	16,391
Transportation and Communication	13,927,185	16,255,936	12,205,728	14,094,967	523,832	695,317
Equipment	98,626	145,837	80,427	123,888	11,639	14,879
Railway and street railway rolling stock	3,366,915	3,816,594	2,834,437	3,014,285	22,833	329,684
Passenger automobiles and chassis	1,005,618	1,215,620	966,033	1,160,053	7,257	1,654
Trucks, truck tractors and chassis	342,408	377,048	246,237	233,107	6,114	7,956
Other motor vehicles	545,414	807,619	491,697	769,230	1,356	3,955
Motor vehicle engines	691,095	708,440	673,160	687,151	8,239	12,936
Motor vehicle parts, except engines	5,624,037	6,330,520	5,487,964	6,163,881	64,921	71,397
Marine engines and parts	120,233	144,275	88,482	105,553	16,713	15,900
Ships, boats and parts, except engines	100,709	77,307	48,083	45,660	20,140	22,742
Aircraft, complete with engines	89,246	263,395	85,132	249,392	766	10,822
Aircraft engines and parts	161,242	246,467	137,776	214,602	22,776	30,879
Aircraft parts, except engines	188,617	267,712	182,378	259,034	4,685	6,703
Other transportation equipment	341,135	342,219	179,246	149,910	68,908	86,546
Telephone and telegraph equipment	112,370	114,382	98,765	100,122	6,234	3,502
Televisions, radio sets and phonographs	374,397	454,299	133,128	215,715	6,707	6,792
Electronic tubes and semi-conductors	112,340	164,570	91,102	140,384	8,583	12,972
Other telecommunication and related equipment	652,782	779,632	381,681	463,001	45,963	55,998
Other Equipment and Tools	3,402,661	4,248,100	2,777,401	3,426,609	322,971	408,677
Air conditioning and refrigeration equipment	202,244	237,168	173,196	193,258	15,131	26,431
Electric lighting fixtures and portable lamps	111,079	130,514	88,945	103,827	9,459	10,388
Switchgear and protective equipment	114,624	114,319	46,206	53,398	43,734	38,831
Industrial control equipment	56,787	65,443	51,168	59,623	3,289	3,607
Other electric lighting distribution equipment	151,427	204,287	121,301	149,570	15,254	26,269
Auxiliary electric equipment for engines	155,627	230,132	143,152	217,514	7,440	8,160

19.29 Imports into Canada from all countries, from the United States and from the European Economic Community (EEC)¹, by section and commodity, 1977 and 1978 (thousand dollars) (concluded)

Section and commodity	All countries		United States		EEC	
	1977 [†]	1978	1977 [†]	1978	1977 [†]	1978
END PRODUCT, INEDIBLE (concluded)						
Electrical property measuring instruments	68,373	90,666	57,673	77,433	7,370	9,443
Miscellaneous measuring and controlling instruments	110,887	143,375	99,814	128,960	6,770	9,656
Medical and related equipment	114,639	135,696	100,513	116,470	8,812	11,204
Navigation equipment	17,718	28,353	16,032	26,635	1,056	1,457
Other measuring and laboratory equipment	299,091	355,345	241,282	281,923	33,460	42,195
Safety and sanitation equipment	95,124	127,192	84,025	106,495	7,304	9,737
Service industry equipment	78,045	104,378	69,219	93,351	6,531	7,545
Furniture and fixtures	214,252	243,249	149,924	164,223	35,409	41,118
Hand tools and cutlery	237,849	284,257	170,549	194,690	28,382	35,588
Electronic computers	562,074	852,664	530,956	778,583	20,932	39,891
Other office machines and equipment	235,552	221,981	149,796	122,003	36,823	36,283
Miscellaneous equipment and tools	577,268	679,084	483,650	559,652	35,814	50,873
Personal and Household Goods	1,948,877	2,191,763	595,804	654,310	404,181	441,284
Outerwear, except knitted	276,396	290,092	32,922	22,214	39,878	42,266
Outerwear, knitted	231,648	248,835	17,462	17,184	34,082	29,399
Other apparel and apparel accessories	163,075	195,464	45,935	60,971	26,633	25,608
Footwear	231,422	255,028	20,209	18,248	86,678	90,846
Watches, clocks, jewellery and silverware	172,018	196,456	55,670	57,805	40,223	42,716
Sporting and recreation equipment	161,317	176,993	78,531	92,601	22,898	24,535
Games, toys and children's vehicles	124,388	144,576	57,777	69,079	12,438	14,688
House furnishings	154,687	154,474	87,026	83,608	23,730	21,927
Kitchen utensils, cutlery and tableware	188,468	222,520	70,877	76,488	62,523	80,224
Other personal and household goods	245,458	307,326	129,395	156,111	55,099	69,075
Miscellaneous End Products	2,188,603	2,599,957	1,531,297	1,801,992	326,253	447,837
Medicinal and pharmaceutical products	220,255	138,387	102,019	82,472	53,939	37,529
Medical, ophthalmic and orthopedic supplies	192,800	241,382	138,700	170,692	34,825	46,122
News papers, magazines and periodicals	160,515	220,399	146,601	198,168	12,915	21,032
Books and pamphlets	247,455	284,542	193,870	216,672	48,927	61,813
Other printed matter	148,698	160,216	125,693	135,492	13,414	15,500
Stationers' and office supplies	106,587	134,525	79,091	94,751	16,434	24,415
Unexposed photographic films and plates	147,364	178,283	89,294	116,490	36,845	36,111
Other photographic goods	340,437	440,063	223,646	285,290	25,662	31,404
Containers and closures	159,114	188,302	144,129	167,055	9,126	13,422
Other end products, inedible	465,378	613,857	288,255	334,910	74,167	160,489
SPECIAL TRANSACTIONS — TRADE	421,221	389,615	273,199	243,429	70,763	64,250
Total, imports	42,332,269	49,937,673	29,814,933	35,246,284	3,639,890	4,635,820

In this table a dash indicates that either there was no trade or the amount was less than \$500.

¹Includes the United Kingdom.

19.30 Domestic exports from Canada to all countries, to the United States and to the European Economic Community (EEC), by section and commodity, 1977 and 1978 (thousand dollars)

Section and commodity	All countries		United States		EEC	
	1977 [†]	1978	1977 [†]	1978	1977 [†]	1978
LIVE ANIMALS	151,258	213,780	131,194	177,247	4,319	7,145
FOOD, FEED, BEVERAGES AND TOBACCO	4,456,298	5,087,259	1,128,881	1,320,296	876,584	917,821
Meat, fresh, chilled or frozen	208,617	291,757	73,132	111,711	21,552	28,622
Other meat and meat preparations	14,857	19,950	7,977	9,054	288	328
Fish, whole or dressed, fresh or frozen	158,723	241,329	61,828	71,649	54,699	77,507
Fish, fillets and blocks, fresh or frozen	245,520	323,151	206,373	269,785	37,052	45,626
Fish, preserved, except canned	65,052	93,959	26,166	39,970	7,201	14,713
Fish, canned	71,369	71,432	10,126	10,578	39,454	39,122
Shellfish	250,557	372,423	106,220	150,407	25,000	41,709
Dairy produce, eggs and honey	112,530	114,766	14,879	17,317	10,481	15,146
Barley	312,347	384,243	25,797	15,604	103,691	81,283
Wheat	1,881,546	1,912,830	4,230	123	372,157	359,170
Other cereals, unmilled	79,783	92,345	11,728	6,941	27,520	23,668
Wheat flour	119,606	152,255	67	210	13	31
Other cereals, milled	52,081	58,296	16,338	15,862	4,003	4,501
Cereal preparations	39,225	51,814	36,141	48,103	440	379
Fruits and fruit preparations	42,645	64,566	30,743	45,917	3,594	7,829
Vegetables and vegetable preparations	118,869	102,133	28,369	33,768	49,230	26,930
Sugar and sugar preparations	74,042	80,258	60,971	63,326	1,396	3,829
Other foods and materials for food	66,022	58,535	41,339	24,587	4,968	6,182
Oilseed cake and meal	31,230	38,650	2,649	1,058	23,996	30,320
Other feeds of vegetable origin	76,422	78,092	36,100	38,039	9,279	9,607
Other fodder and feed	56,990	59,637	17,407	21,274	22,630	18,105
Whisky	270,741	268,891	264,131	260,828	3,297	4,103
Other beverages	38,481	51,123	37,542	49,042	75	194
Tobacco	69,043	104,824	8,628	15,144	54,570	78,917

19.30 Domestic exports from Canada to all countries, to the United States and to the European Economic Community (EEC), by section and commodity, 1977 and 1978 (thousand dollars)
(continued)

Section and commodity	All countries		United States		EEC	
	1977 ^a	1978	1977 ^a	1978	1977 ^a	1978
CRUDE MATERIALS, INEDIBLE	8,850,127	8,829,754	5,461,953	5,450,581	1,255,999	1,125,695
Raw hides and skins	89,169	109,194	19,795	24,298	13,296	19,179
Fur skins, undressed	69,515	82,240	20,861	23,673	29,453	32,054
Other crude animal products	20,421	16,519	16,491	11,071	1,677	2,929
Seeds for sowing	29,506	30,012	18,395	16,711	6,308	7,036
Flaxseed	93,538	102,534	12,595	4,588	49,878	68,353
Rapeseed	310,047	369,549	177	271	55,075	26,490
Other oilseeds, oil nuts and oil kernels	37,143	71,588	12,232	12,384	9,764	32,547
Other crude vegetable products	49,988	59,395	45,851	53,038	1,391	2,278
Pulpwood	12,081	14,381	8,673	10,740	2,611	3,640
Pulpwood chips	34,727	48,909	30,014	35,918	—	636
Other crude wood products	58,852	52,943	25,858	23,370	1,944	818
Textile and related fibres	52,353	48,840	13,995	13,020	3,285	1,770
Iron ores and concentrates	1,063,922	782,793	756,310	546,569	229,869	194,288
Scrap iron and steel	51,025	70,811	37,268	48,537	4,355	14,223
Aluminum ores, concentrates and scrap	42,933	56,663	33,220	41,871	1,330	2,250
Copper in ores, concentrates and scrap	310,695	320,719	44,127	25,725	22,001	17,526
Lead in ores, concentrates and scrap	53,435	59,853	8,191	10,555	10,905	8,594
Nickel in ores, concentrates and scrap	537,442	294,794	77,532	99,489	274,060	108,090
Precious metals in ores, concentrates and scrap	153,804	192,632	62,776	74,155	63,994	78,003
Zinc in ores, concentrates and scrap	216,599	189,619	24,602	46,529	125,405	105,071
Radioactive ores and concentrates	75,438	207,156	72,848	163,911	2,590	42,454
Other metals in ores, concentrates and scrap	224,461	227,763	43,657	65,417	96,581	79,057
Crude petroleum	1,750,637	1,572,662	1,750,637	1,572,662	—	—
Natural gas	2,028,053	2,190,294	2,028,053	2,190,294	—	—
Coal and other crude bituminous substances	650,240	751,872	54,120	61,728	25,636	39,521
Asbestos, unmanufactured	553,438	568,386	138,168	155,426	155,145	158,852
Sulphur	122,288	163,940	18,913	20,310	18,249	21,717
Other crude non-metallic minerals	126,102	141,923	63,901	75,982	49,945	55,942
Other waste and scrap materials	32,275	31,767	22,690	22,339	1,251	2,376
FABRICATED MATERIALS, INEDIBLE	14,926,838	18,906,250	10,851,868	13,737,745	2,023,216	2,221,382
Leather and leather fabricated materials	19,038	25,241	14,560	19,195	2,257	2,486
Lumber, softwood	2,338,643	3,158,220	1,868,769	2,614,771	206,526	218,657
Lumber, hardwood	48,480	70,614	23,977	32,158	22,573	34,472
Shingles and shakes	140,050	185,744	137,424	182,200	1,876	2,752
Other sawmill products	9,177	12,489	8,974	12,086	176	156
Veneer	64,124	89,172	55,183	68,426	6,359	12,871
Plywood	84,141	122,408	11,760	15,554	71,440	105,101
Other wood fabricated materials	99,287	153,572	87,868	136,196	8,436	12,963
Wood pulp and similar pulp	2,157,594	2,180,905	1,218,685	1,177,590	622,816	583,159
Newsprint paper	2,381,500	2,886,235	1,869,417	2,333,814	197,877	234,706
Other paper for printing	151,430	224,344	131,930	199,148	9,071	10,862
Paperboard	103,558	104,205	10,598	26,670	57,014	36,162
Other paper	172,724	243,316	96,856	154,858	32,298	38,812
Yarn, thread, cordage, twine and rope	22,196	34,584	10,574	13,071	3,431	7,648
Cotton broad woven fabrics	10,920	9,139	5,244	5,183	1,361	1,346
Other broad woven fabrics	32,506	47,679	5,017	9,291	14,987	20,981
Other textile fabricated materials	45,401	57,142	20,510	25,520	4,892	4,355
Oils, fats, waxes, extracts and derivatives	138,941	153,614	13,434	16,788	30,329	36,402
Chemical elements	110,692	124,836	39,741	41,715	51,015	59,847
Other inorganic chemicals	352,506	653,611	326,427	451,331	10,435	77,187
Organic chemicals	301,399	401,529	198,384	235,436	64,564	118,437
Fertilizers and fertilizer materials	658,969	734,933	540,454	581,327	4,595	6,362
Synthetic rubber and plastics materials	173,126	261,570	114,160	144,604	22,628	28,157
Plastics, basic shapes and forms	73,183	83,977	42,770	52,735	4,562	4,841
Other chemical products	69,014	96,291	43,680	62,352	9,804	9,732
Petroleum and coal products	649,100	776,580	584,745	702,964	8,651	16,279
Ferro-alloys	27,365	37,680	19,837	31,097	4,892	2,110
Primary iron and steel	141,118	173,643	86,152	92,522	39,419	34,766
Castings and forgings, steel	173,241	175,423	169,390	173,509	1,392	717
Bars and rods, steel	105,092	182,778	84,448	159,305	13,476	14,502
Plate, sheet and strip, steel	303,346	392,114	229,262	329,943	8,131	6,782
Railway track material	33,882	58,959	25,695	25,468	2	9
Other iron and steel and alloys	262,971	406,460	240,089	375,659	2,676	2,784
Aluminum, including alloys	769,580	1,140,562	536,275	664,399	23,027	14,743
Copper and alloys	522,382	509,529	196,751	192,663	241,270	220,648
Lead, including alloys	85,344	102,491	49,709	57,374	31,025	35,457
Nickel and alloys	436,937	564,810	309,478	403,700	88,298	92,797
Precious metals, including alloys	416,488	567,511	388,715	510,828	18,237	10,967
Zinc, including alloys	228,277	317,410	164,628	196,107	38,347	50,403
Other non-ferrous metals and alloys	36,769	52,820	22,038	34,862	11,029	12,454
Metal fabricated basic products	289,318	397,889	218,908	310,600	12,697	18,404
Abrasive basic products	90,917	110,554	80,068	97,700	4,933	5,194
Other non-metallic mineral basic products	162,672	266,598	135,832	233,673	10,377	10,231
Electricity	376,965	478,875	376,965	478,875	—	—
Other fabricated materials, inedible	56,473	78,193	36,489	54,479	4,012	3,680

19.30 Domestic exports from Canada to all countries, to the United States and to the European Economic Community (EEC), by section and commodity, 1977 and 1978 (thousand dollars) (concluded)

Section and commodity	All countries		United States		EEC	
	1977 [†]	1978	1977 [†]	1978	1977 [†]	1978
END PRODUCTS, INEDIBLE	15,231,158	18,765,513	12,777,603	15,675,093	495,723	562,935
Machinery	1,723,278	2,142,010	1,260,395	1,573,064	82,588	110,414
Engines and turbines, general purpose	53,981	97,017	30,358	48,121	890	4,501
Electric generators and motors	35,984	46,843	21,106	29,622	1,087	2,264
Other general purpose industrial machinery	237,020	289,628	129,758	172,110	10,465	14,295
Materials handling machinery and equipment	171,299	233,779	132,948	182,683	4,533	8,480
Drilling, excavating and mining machinery	181,384	207,772	106,173	142,672	9,324	9,356
Metalworking machinery	97,171	124,102	78,164	100,294	4,460	7,223
Woodworking machinery and equipment	59,227	81,949	32,944	40,310	16,206	17,656
Construction machinery and equipment	84,715	116,430	48,708	70,234	5,543	8,431
Plastics industry machinery and equipment	86,951	108,683	81,589	99,450	2,257	4,476
Pulp and paper industries machinery	48,188	84,218	24,821	42,922	735	1,997
Other special industry machinery	108,505	146,240	67,163	87,010	10,453	14,626
Soil preparation, seeding and fertilizing machinery	88,827	72,963	83,860	69,826	873	755
Combine reaper-threshers and parts	202,864	209,792	178,891	191,183	12,235	12,655
Other haying and harvesting machinery	70,729	70,585	64,548	67,731	1,711	593
Other agricultural machinery and equipment	82,043	95,213	76,210	87,136	1,143	1,736
Tractors	114,389	156,794	103,156	141,761	674	1,368
Transportation and Communication Equipment	11,742,903	14,281,525	10,459,333	12,634,494	184,706	177,208
Railway and street railway rolling stock	50,229	115,248	6,657	59,269	12	254
Passenger automobiles and chassis	4,474,162	5,007,464	4,126,057	4,546,724	13,782	16,950
Trucks, truck tractors and chassis	2,136,758	2,703,264	1,931,293	2,531,362	24	415
Other motor vehicles	194,220	256,957	127,878	169,956	1,230	3,548
Motor vehicle engines and parts	944,934	1,061,954	925,659	1,052,918	207	429
Motor vehicle parts, except engines	2,673,705	3,417,021	2,505,341	3,116,102	13,607	19,247
Ships, boats and parts	220,204	250,686	102,979	117,231	61,499	7,627
Aircraft, complete with engines	66,651	117,873	12,552	8,663	3,219	3,553
Aircraft, engines and parts	226,066	308,546	168,711	244,586	21,970	24,846
Aircraft parts, except engines	192,930	264,582	149,742	217,680	17,803	18,777
Other transportation equipment	158,034	212,777	149,991	200,190	1,020	2,865
Televisions and radio sets and phonographs	57,593	104,744	47,934	89,064	8,536	13,575
Other telecommunication and related equipment	347,416	460,407	204,539	280,750	41,798	65,121
Other Equipment and Tools	932,807	1,257,306	583,009	847,451	126,734	124,191
Heating and refrigeration equipment	44,342	60,310	26,596	43,174	3,025	2,690
Cooking equipment for food	13,601	15,104	5,089	6,274	5,208	5,366
Electric lighting and distribution equipment	126,108	170,302	65,209	98,347	12,045	14,074
Navigation equipment and parts	51,107	68,517	34,270	46,869	12,617	13,061
Other measuring, controlling, laboratory, medical and optical equipment	132,363	175,861	75,937	99,553	19,090	18,899
Hand tools and miscellaneous cutlery	38,750	47,664	14,881	16,033	3,883	4,773
Office machines and equipment	346,684	475,057	221,942	351,473	59,383	49,990
Other equipment and tools	179,852	244,491	139,086	185,729	11,483	15,337
Personal and Household Goods	297,869	388,256	180,356	220,654	46,635	62,469
Apparel and apparel accessories	126,309	151,351	70,006	80,629	27,852	35,026
Footwear	31,108	39,770	27,787	35,245	2,380	3,312
Toys, games, sporting and recreation equipment	54,625	72,339	37,169	44,850	5,994	10,869
Other personal and household goods	85,827	124,797	45,394	59,930	10,408	13,262
Miscellaneous End Products	534,301	696,417	294,510	399,431	55,060	88,653
Medicinal and pharmaceutical products	49,849	59,230	10,446	8,742	10,379	17,378
Medical, ophthalmic and orthopedic supplies	22,723	27,072	8,994	8,790	5,305	6,671
Printed matter	90,161	123,053	77,901	106,126	6,717	9,048
Photographic goods	62,083	101,662	50,078	75,037	6,565	15,583
Firearms, ammunition and ordnance	13,101	27,547	8,480	9,073	2,366	4,935
Containers and closures	58,435	78,408	48,188	64,267	2,207	2,891
Prefabricated buildings and structures	136,385	147,972	31,429	59,628	2,434	4,125
Other end products	101,565	131,473	58,995	67,769	19,086	28,022
SPECIAL TRANSACTIONS — TRADE	68,179	116,379	52,058	94,045	2,775	5,169
Total, domestic exports	43,683,859	51,918,935	30,403,557	36,455,007	4,658,617	4,840,147

19.31 Trade of Canada with principal trading areas, 1968-78

Item and year	United States		United Kingdom		Other EEC		Japan		Other countries	
	Value \$ '000,000	% of total	Value \$ '000,000	% of total	Value \$ '000,000	% of total	Value \$ '000,000	% of total	Value \$ '000,000	% of total
Imports										
1968	9,051	73.2	696	5.6	698	5.6	360	2.9	1,555	12.6
1969	10,243	72.5	791	5.6	831	5.9	496	3.5	1,769	12.5
1970	9,917	71.1	738	5.3	849	6.1	582	4.2	1,866	13.4
1971	10,951	70.1	837	5.4	984	6.3	803	5.1	2,043	13.1
1972	12,878	69.0	949	5.1	1,215	6.5	1,071	5.7	2,556	13.7
1973	16,502	70.7	1,005	4.3	1,477	6.3	1,011	4.3	3,330	14.3
1974	21,387	67.4	1,126	3.5	1,920	6.1	1,430	4.5	5,859	18.5
1975	23,641 ^r	68.1	1,222	3.5	2,074	6.0	1,205	3.5	6,573 ^r	18.9 ^r
1976 ^r	25,801	68.8	1,150	3.1	1,991	5.3	1,524	4.1	7,028	18.7
1977 ^r	29,815	70.4	1,279	3.0	2,361	5.5	1,793	4.2	7,085	16.9
1978	35,246	70.6	1,600	3.2	3,036	6.1	2,268	4.5	7,787	15.6
Exports ¹										
1968	9,285	67.9	1,226	9.0	789	5.8	608	4.4	1,771	12.9
1969	10,551	71.0	1,113	7.5	887	6.0	626	4.2	1,694	11.4
1970	10,900	64.8	1,501	8.9	1,242	7.4	813	4.8	2,364	14.1
1971	12,025	67.5	1,395	7.8	1,145	6.4	831	4.7	2,424	13.6
1972	13,973	69.3	1,385	6.9	1,178	5.8	965	4.8	2,649	13.1
1973	17,129	67.4	1,604	6.3	1,581	6.2	1,814	7.1	3,293	13.0
1974	21,399	66.0	1,929	5.9	2,175	6.7	2,231	6.9	4,708	14.5
1975 ^r	21,697	65.1	1,818	5.4	2,383	7.2	2,135	6.4	5,295	15.9
1976 ^r	25,901	67.3	1,898	4.9	2,712	7.0	2,399	6.2	5,565	14.6
1977 ^r	31,112	69.8	1,946	4.4	2,772	6.2	2,519	5.7	6,204	13.9
1978	37,175	70.4	2,007	3.8	2,912	5.5	3,062	5.8	7,686	14.5

¹Includes domestic exports and re-exports.

19.32 Measures of bilateral trade between Canada and the United States, 1972-77 (billions of US dollars)

Year	Published by Canada			Published by United States			Reconciled figures		
	Imports from US	Exports to US	Canadian balance	Exports to Canada	Imports from Canada	Canadian balance	From US to Canada	From Canada to US	Canadian balance
1972	13.0	14.1	1.1	12.4	14.9	2.5	12.6	14.2	1.5
1973	16.5	17.1	0.6	15.1	17.7	2.6	16.1	17.3	1.2
1974	21.7	21.7	—	19.9	22.3	2.3	21.1	22.1	0.9
1975	23.1	21.1	-1.9	21.7	22.2	0.4	22.8	21.4	-1.3
1976	25.9	25.9	—	24.1	26.2	2.1	25.5	26.2	0.7
1977	27.8	29.0	1.2	25.7	29.4	3.6	27.6	29.3	1.6

19.33 Price and volume indexes of trade in Canada by section, 1976-78 (1971=100)

Item and year	Food, feed, beverages and tobacco			Crude materials, inedible			Fabricated materials, inedible			End products, inedible			All sections		
	Index	Percentage change from previous year		Index	Percentage change from previous year		Index	Percentage change from previous year		Index	Percentage change from previous year		Index	Percentage change from previous year	
Current weighted price indexes															
Imports	1975	172.0	5.7	350.1	22.6		162.4 ^r	9.9		135.6	17.1		157.4	15.8	
	1976 ^r	159.3	-7.4	360.1	2.9		162.5	-0.1		139.1	2.6		157.6	0.1	
	1977 ^r	190.3	19.5	397.0	10.2		184.8	13.7		156.3	12.4		176.8	12.2	
	1978	214.6	12.8	426.3	7.4		215.0	16.3		177.9	13.8		200.5	13.4	
Domestic exports	1975	223.3 ^r	0.9	244.2 ^r	16.5		183.0 ^r	14.4		127.5	11.2		173.1	10.7	
	1976 ^r	212.6	-5.0	256.4	4.9		191.1	4.4		134.0	5.1		177.2	2.4	
	1977 ^r	192.5	-9.5	284.7	11.0		212.6	11.3		144.3	7.7		188.7	6.5	
	1978	213.3	10.8	308.6	8.4		235.1	10.6		157.9	9.4		204.8	8.5	
Fixed weight volume indexes															
Imports	1975	135.6	2.6	109.9	1.9		116.6 ^r	-16.5		155.1 ^r	-3.8		141.3 ^r	-5.6	
	1976 ^r	155.2	14.5	107.0	-2.6		121.7	4.6		166.9	7.7		152.4	8.0	
	1977 ^r	153.0	-1.4	101.3	-5.3		119.8	-1.6		171.1	2.5		153.1	0.5	
	1978	154.1	0.7	104.6	3.3		123.2	2.8		178.1	4.1		157.9	3.1	
Domestic exports	1975 ^r	89.0	5.5	99.9	-12.4		93.2	-19.4		132.6	1.9		108.1	-7.5	
	1976 ^r	95.7	8.8	98.9	-0.8		107.5	15.7		153.2	15.6		121.0	12.2	
	1977 ^r	113.2	18.3	95.1	-3.8		117.9	9.7		170.5	11.3		131.8	8.9	
	1978	116.7	3.1	87.5	-8.0		135.1	14.6		191.9	12.6		144.4	9.6	

19.34 Value of total exports and imports by geographic region and country, 1976-78 (thousand dollars)

Region and country ¹	Exports ^a		Imports ^a	
	1976 ^a	1977 ^a	1976 ^a	1977 ^a
WESTERN EUROPE				
United Kingdom	1,897,520 (3)	1,946,415 (3)	2,006,548 (3)	1,278,817 (4)
Gibraltar	3,160	14	25	1
Ireland	32,765	31,641	31,083	40,566
Malta	2,286	2,267	610	459
Austria	22,314	19,952	25,503	62,128
Belgium and Luxembourg	491,117 (7)	520,978 (7)	485,682 (10)	124,667
Denmark	34,864	49,107	64,408	160,403
Finland	17,351	20,246	31,099	81,036
France	426,320 (9)	370,000 (10)	477,853	38,452
Germany, Federal Republic of	713,313 (4)	778,349 (4)	792,307 (4)	522,012 (8)
Greece	36,492	35,449	780,743 (5)	966,992 (5)
Iceland	1,171	1,856	56,816	31,450
Italy	555,929 (5)	501,893 (8)	486,321 (9)	1,278
Netherlands	457,407 (8)	519,980 (6)	574,380 (6)	399,554 (9)
Norway	152,481	224,010	144,770	190,511
Portugal	19,136	34,751	133,527	69,781
Spain	130,167	133,131	28,600	26,346
Sweden	107,703	110,089	135,930	114,037
Switzerland	88,319	104,968	263,226	325,073
Total, Western Europe	5,189,815	5,405,097	163,405	220,746
			3,953,599	4,464,806
				5,641,015
EASTERN EUROPE				
Albania	145	324	119	27
Bulgaria	6,402	4,363	5,024	2,136
Czechoslovakia	20,323	13,040	13,761	47,166
German Democratic Republic	46,070	31,524	24,485	15,381
Hungary	6,067	8,191	8,207	18,385
Poland	131,066	156,693	224,800	49,385
Romania	38,786	12,564	38,121	47,868
Union of Soviet Socialist Republics	550,034 (6)	360,044	567,306 (7)	22,122
Yugoslavia	19,422	57,597	43,212	56,659
Total, Eastern Europe	818,315	646,339	17,609	18,101
			205,752	214,194
				251,833
MIDDLE EAST				
Bahrain	1,476	1,596	2,490	1
Cyprus	2,655	2,164	5,986	302
Qatar	4,161	3,311	2,673	1
United Arab Emirates	12,057	20,428	38,834	61,982
Egypt, Arab Republic of	36,274	75,779	57,002	14,192
Ethiopia	6,542	3,670	10,531	33,840
Iran	153,388	147,116	157,861	10,299
Iraq	56,554	71,463	133,630	1,515
Israel	61,071	52,200	111,316	537,263 (7)
Jordan	5,876	7,848	81,862	133,630
Kuwait	22,564	37,297	38,396	42,549
Lebanon	3,141	27,532	12	18
Liechtenstein	13,139	29,791	22,439	20,064
Saudi Arabia	110,943	20,168	446	299
Somalia	4,349	109,965	107,323	712,281 (6)
		59	481,607 (7)	10
			—	749,034 (6)
			—	—

19.34 Value of total exports and imports, by geographic region and country, 1976-78 (thousand dollars) (continued)

Region and country ^a	Exports ^a		Imports ^a	
	1976 ^c	1978	1977 ^c	1978
MIDDLE EAST (concluded)				
Sudan	3,135	23,787	122	322
Syria	13,105	22,174	99	72
Turkey	66,064	43,297	7,048	11,707
Yemen	2,949	818,906	5,853	43
Total, Middle East	579,442		1,486,777	1,614,949
OTHER AFRICA				
Gambia	204	603	8	3
Ghana	21,891	22,377	4,671	3,527
Kenya	11,467	21,108	20,385	16,667
Malawi	2,179	6,534	115	323
Mauritius and Dependencies	700	722	6,483	7,536
Nigeria	34,727	38,063	37,563	10,087
Rhodesia	18	2	—	3
Sierra Leone	169	205	1,454	3,909
South Africa, Republic of	99,347	113,140	146,220	149,993
Tanzania	15,972	32,452	9,181	5,335
Uganda	327	82	1,846	1,807
Zambia	29,068	14,484	8,119	3
Zimbabwe	105	303	8,417	54
Commonwealth Africa, other	114,991	161,286	65,420	62,091
Algeria	935	1,524	1,000	1
Angola	1,691	926	—	3
Benin	3,759	14,729	5,369	883
Burkina Faso	3,647	4,728	9,291	206
French Africa, other	2,469	1,148	17,246	56,209
Gabon	547	323	22,686	23,761
Guinea	8,630	413	7,948	6,158
Ivory Coast	3,233	15,954	12,255	12,255
Liberia	1,260	3,721	2,581	2,581
Madagascar	919	3,595	1,284	658
Mali	2,963	4,141	2,780	3
Morocco	6,370	29,386	1	2,777
Mozambique	780	9,334	3,503	2,768
Portuguese Africa, other	1,936	221	5,209	4,754
Senegal	104	5,177	1,511	1
Spanish Africa	12,251	244	898	10
Togo	19,854	8	2	45
Tunisia	16,613	11,421	116	169
Zaire, Republic of	419,126	28,051	129	62
Total, other Africa		9,763	7,444	4,637
		545,658	362,282	364,457
OTHER ASIA				
Bangladesh	38,941	107,049	7,101	7,039
Hong Kong	62,142	284,401	280,422	331,734
India	158,266	101,063	65,477	65,117
Indonesia	31,807	254,084	66,755	63,202
Malaysia	36,879	41,304	53,648	9,124
Pakistan	32,929	75,103	10,105	100,542
Singapore	14,493	62,510	93,509	18,659
Sri Lanka, Republic of		17,202	77,626	
		16,429	12,091	

19.34 Value of total exports and imports, by geographic region and country, 1976-78 (thousand dollars) (continued)

Region and country ¹	Exports ^a		Imports ^a	
	1976 ^c	1977 ^c	1976 ^c	1977 ^c
OTHER ASIA (concluded)				
Afghanistan	1,520	3,100	5,858	531
Burma	4,250	6,181	4,756	208
China, People's Republic of	196,525	369,270	504,012 (8)	88,368
Indonesia	80,739	67,110	84,670	21
Japan	2,399,694 (2)	2,518,610 (2)	3,062,186 (2)	18,153
Khmer Republic — Laos	1	675	1,523,886 (2)	1,792,942 (2)
Korea, North	9,442	99	1,354	1
Korea, South	119,949	144,227	304,022	527
Philippines	56,567	76,557	31,365	322,724
Portuguese Asia	1	28	860	39,349
Taiwan	43,106	73,953	—	404
Thailand	38,715	54,128	292,540	320,700
Vietnam	171	11,132	9,086	397,186 (10)
Total, other Asia	3,326,135	3,761,702	2,777,768	14,305
OCEANIA				50
Australia	375,778	412,525 (9)	415,990	3,821,421
Fiji	1,176	2,394	1,825	339,207 (10)
New Zealand	58,172	71,614	69,662	353,002 (10)
British Oceania, other	78	72	167	1,554
French Oceania	1,735	1,048	2,363	72,056
Papua, New Guinea	—	—	3,471	39
United States Oceania	1,141	1,071	2,312	80
Total, Oceania	438,079	488,723	413,836	9
SOUTH AMERICA				37
Falkland Islands	165	805	19	426,677
Guyana	12,059	8,212	5,864	—
Argentina	48,118	108,842	21,048	12,884
Bolivia	4,052	4,142	7,041	22,874
Brazil	335,023	287,089	462,609	48,008
Chile	14,704	37,873	56,902	11,222
Colombia	60,069	61,539	83,352	11,222
Ecuador	27,118	20,832	40,168	22,653
French Guiana	20	156	30,308	63,712
Paraguay	350	445	—	68,641
Peru	56,746	48,349	2,528	191
Suriname	3,246	8,164	15,364	4,034
Uruguay	6,651	8,325	9,726	37,526
Venezuela	376,616 (10)	571,241 (5)	689,881 (5)	11,983
Total, South America	945,002	1,161,015	1,298,605 (3)	4,237
CENTRAL AMERICA AND ANTILLES				1,359,807 (3)
Bahamas	15,821	13,298	11,162	1,833,759
Barbados	15,872	17,434	6,359	10,943
Belize	1,958	1,726	1,917	5,886
Bermuda	30,210	40,515	1,554	628
Jamaica	47,986	38,474	14,770	1,518
				55,353
				70,569

19.34 Value of total exports and imports, by geographic region and country, 1976-78 (thousand dollars) (concluded)

Region and country ¹	Exports ^a		Imports ^a	
	1977r	1978	1977r	1978
CENTRAL AMERICA AND ANTILLES (concluded)				
Leeward and Windward Islands	14,150	20,964	568	1,186
Trinidad and Tobago	41,513	53,353	21,343	29,318
Costa Rica	17,544	14,096	24,164	29,340
Cuba	262,336	190,443	60,591	60,634
Dominican Republic	23,230	25,760	29,014	25,725
El Salvador	10,734	13,553	9,746	12,519
French West Indies	2,107	1,243	66	60
Guatemala	21,988	16,642	17,927	24,116
Honduras	17,962	16,000	3,407	5,980
Haiti	13,229	9,003	17,405	31,841
Mexico	215,563	221,945	145,191	184,532
Netherlands Antilles	4,372	9,309	7,087	194,912
Nicaragua	4,754	9,178	13,253	24,175
Panama	19,342	20,239	5,411	13,012
Puerto Rico	59,493	61,317	38,318	18,896
Virgin Islands of the United States	1,358	2,468	89	49,745
Total, Central America and Antilles	841,522	796,961	428,750	86
NORTH AMERICA				
Greenland	2,088	2,895	448	603,573
St. Pierre and Miquelon	14,379	13,579	175	620
United States	25,901,375 (1)	37,175,307 (1)	25,801,282 (1)	94
Total, North America	25,917,843	37,191,781	25,801,904	35,246,284 (1)
Total, all countries	38,475,279	52,842,254	37,494,010	35,247,005
			42,332,269	49,937,673

In this table a dash indicates that either there was no trade or the amount was less than \$500.

¹The country classification was designed for purposes of economic geography and does not reflect the views of the Government of Canada on international issues of recognition, sovereignty or jurisdiction.^aFigures in parentheses indicate rank of 10 leading countries, 1976-78.

19.35 Trade in energy-related products, 1966-79 (million dollars)

Item and year	Crude petroleum	Natural gas	Coal and other crude bituminous products	Petroleum and coal products	Electricity	Radioactive ores, elements and isotopes	Total
Domestic exports							
1966	322	109	14	29	16	44	534
1967	398	124	16	40	16	31	625
1968	446	154	18	50	14	36	718
1969	526	176	10	59	18	31	820
1970	649	206	30	88	34	34	1,041
1971	787	251	87	117	48	34	1,324
1972	1,008	307	107	210	68	70	1,770
1973	1,482	351	166	312	109	93	2,513
1974	3,420	494	319	611	175	100 ^r	5,119 ^r
1975	3,052	1,092	494	638	104	129	5,509
1976	2,287	1,617	561	559	162	244 ^r	5,430 ^r
1977	1,751	2,028	651	649	377	237 ^r	5,693 ^r
1978	1,573	2,190	752	1,019	479	658	6,671
1979	2,405	2,889	835	1,879	729	981	9,718
Imports							
1966	316	18	142	181	10	6	673
1967	323	20	145	193	10	4	695
1968	373	35	163	215	12	4	802
1969	393	16	115	224	9	5	762
1970	415	5	150	206	12	68	856
1971	541	7	151	213	11	21	944
1972	681	8	179	210	9	15	1,102
1973	943 ^r	8	167	215	6	24	1,363 ^r
1974	2,646	6	303	374	5	16	3,350
1975	3,304 ^r	8	577	276	13	13	4,191 ^r
1976	3,273 ^r	9	549	220	9	12	4,074 ^r
1977	3,210 ^r	1	623	301	15	29 ^r	4,178 ^r
1978	3,471	1	636	378	2	12	4,499
1979	4,479	1	867	390	1	12	5,749
Balance (Domestic exports minus imports)							
1966	6	91	-128	-152	6	38	-139
1967	75	104	-129	-153	6	27	-70
1968	73	119	-145	-165	2	32	-84
1969	133	160	-105	-165	9	26	58
1970	234	201	-120	-118	22	-34	185
1971	246	244	-64	-96	37	13	380
1972	327	299	-72	-	59	55	668
1973	539 ^r	343	-1	97	103	69	1,150 ^r
1974	774	488	16	237	170	84 ^r	1,769 ^r
1975	-252 ^r	1,084	-83	362	91	116	1,318 ^r
1976	-986 ^r	1,608 ^r	12	339	153	232 ^r	1,356 ^r
1977	-1,459 ^r	2,028	28	348	362	208 ^r	1,515 ^r
1978	-1,898	2,190	116	641	477	646	2,172
1979	-2,074	2,889	-32	1,489	728	969	3,969

^rLess than \$500,000.*Sources*

19.1 - 19.21 Merchandising and Services Division, Economic Statistics Field, Statistics Canada.

19.22 - 19.23 Marketing Services Division, Food Production and Marketing Branch, Canada Department of Agriculture.

19.24 - 19.25 Public Finance Division, Social Statistics Field, Statistics Canada.

19.26 - 19.35 External Trade Division, Economic Statistics Field, Statistics Canada.

External relations and defence

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Canada's international status

20.1

The growth of Canada's international status is reflected in the development of the external affairs department since its establishment in 1909. Until the 20th century Canadian negotiations with foreign countries were conducted through the British foreign office and dealings with other parts of the Empire through a Colonial office. The gradual recognition of Canadian autonomy in international affairs and increased Canadian responsibilities abroad made expansion of services and representation after World War I not only inevitable but imperative. An important step in the evolution of Canada's international status was an agreement reached at the 1926 Imperial Conference allowing for Canadian sovereignty in international negotiations and affairs.

In the 1920s and 1930s Canada established its own diplomatic relations with several countries, including the United States, France and Japan. Representation was expanded greatly since then, especially since World War II, with the result that Canada now has formal diplomatic relations with 155 countries and maintains diplomatic, consular or trade representation in 82 of them.

Membership in international organizations has entailed establishment of a permanent Canadian delegation to the United Nations in New York and a Canadian office at the organization's European headquarters in Geneva in 1949. These permanent missions have since been expanded to include UN agencies in Paris and Vienna. Canada was one of the founding members of the North Atlantic Treaty Organization (NATO) in 1949 and when the NATO permanent council was established in 1952 a Canadian permanent delegation was set up in Paris (transferred to Brussels in 1967). Canada maintains a permanent delegation to the Organization for Economic Co-operation and Development in Paris, and a mission of Canada to the European communities in Brussels is responsible for Canada's relations with the European Economic Community, the European Atomic Energy Community and the European Coal and Steel Community. Canada also maintains a permanent observer mission to the Organization of American States in Washington, DC. In addition, officials of the external affairs department represent Canada at many international conferences.

Today Canada's status is reflected in its role in international negotiations over such vital issues as law of the sea, energy reserves, nuclear non-proliferation, north-south economic dialogue and human rights.

Federal-provincial aspects of Canada's international relations

20.1.1

A federal-provincial co-ordination division was established in 1967 in the external affairs department to maintain liaison with the provinces to facilitate their legitimate international activities in a manner that would meet provincial objectives consistent with a unified Canadian foreign policy.

The federal government's position on provincial international relations was outlined in the 1968 white paper *Federalism and international relations*, which emphasizes that Canada's foreign relations must serve and reflect the interests of all provinces as well as those of its two major linguistic communities. The federal government's international policies include recognition of legitimate provincial interests beyond national borders and continued promotion of national unity through adequate international projection of Canada's bilingual character.

Provincial participation at international conferences and in the work of international organizations is assured by including provincial officials on Canadian delegations and by canvassing provincial governments for their views on positions and attitudes that Canada adopts on subjects treated by these organizations. These include areas of particular interest to the provinces such as human and civil rights, education, health, agriculture, labour and environment.

Other international interests of the provinces include promotion of trade, investment, industrial development, immigration, tourism, cultural exchanges, environmental questions, science and technology, bilateral and multilateral agreements, and assistance to developing countries. In matters of aid, the federal government encourages a detailed federal-provincial consultation to ensure that specific projects are co-ordinated. Promotional activities of the provinces and their interests in international activities have led to an increased number of provincial visits abroad. The federal government assists provincial officials by making arrangements for their visits abroad and co-ordinating visits of foreign personalities to provincial capitals.

Treaty-making powers. The federal government has exclusive responsibility for external affairs. It promotes the interest of the entire country within the overall framework of a national policy.

It is the policy of the Canadian government to assist the provinces in achieving their particular aspirations and goals. This is reflected in the frequent consultations between federal and provincial governments regarding treaties of provincial interest and responsibility. A variety of methods have been developed which can allow for full expression of provincial interests in treaty-making.

Once it has been determined that what a province seeks through agreements, in fields of provincial jurisdiction, falls within the framework of Canadian foreign policy, provision is made for direct provincial participation in negotiating with the authorities of the foreign country. When these arrangements are to be incorporated in an international agreement having legal effect, however, this can be achieved only through the federal power to conclude treaties.

20.1.2 Diplomatic and/or consular representation

The addresses of Canadian representatives abroad and representatives of other countries in Canada may be found in Appendix 5.

Bureau of consular services. The bureau co-ordinates consular activities through 115 diplomatic posts abroad to assist Canadians living or travelling outside of Canada.

The consular operations division is concerned with day-to-day consular cases abroad, contingency planning, applications for diplomatic and official visas, as well as for visitor's visas from certain countries, registration of Canadians abroad and responses to enquiries from the public about travel abroad. A member of this division acts as the representative for the department on the refugee status advisory committee.

The consular policy division receives and analyzes consular reports and statistics, negotiates consular conventions and multilateral and bilateral agreements, monitors legislative developments which affect the status of Canadian citizens abroad, provides a link with other government services such as immigration and citizenship, trains consular personnel, provides instructions to posts abroad, recommends appointments of honorary consuls, evaluates services provided, maintains liaison with the travel industry in Canada and provides advice on questions about consular activities. The division annually publishes an information booklet for Canadian travellers, *Bon voyage, but . . .*

Passport services. The passport office issues passports to Canadian citizens through the main passport office at Ottawa and through regional offices at St. John's, Halifax, Montreal, Quebec City, Toronto, Hamilton, Winnipeg, Saskatoon, Calgary, Edmonton and Vancouver. Abroad, the service is provided through Canadian diplomatic missions and consular and trade offices. Certificates of identity are issued in Canada to eligible legally landed non-Canadians. United Nations refugee travel documents are issued in Canada to persons eligible under the UN refugee convention.

20.2 Multilateral activities

20.2.1 Canada and the Commonwealth

The Commonwealth has evolved into an international association of 42 sovereign states embracing approximately one-quarter of the earth's surface and one billion of its people,

who are diverse in race, colour, creed and language. Comprising both developed and developing countries, the Commonwealth represents a unique association whose members share many of the same traditions, political and social values, attitudes and institutions. All members collectively subscribe to certain common ideals known as the Declaration of Commonwealth Principles. Commonwealth membership is not an alternative, but a complement to other forms of international co-operation — its members believe in and work for the success of the United Nations and together belong to a wide range of international organizations.

Commonwealth members (with the year when membership was proclaimed in parentheses if post-1931) are as follows: Britain, Canada, Australia, New Zealand, India (1947), Sri Lanka (1948), Ghana (1957), Malaysia (1957), Nigeria (1960), Cyprus (1961), Sierra Leone (1961), Tanzania (1961), Jamaica (1962), Trinidad and Tobago (1962), Uganda (1962), Kenya (1963), Malawi (1964), Malta (1964), Zambia (1964), Gambia (1965), Singapore (1965), Guyana (1966), Botswana (1966), Lesotho (1966), Barbados (1966), Nauru (1968), Mauritius (1968), Swaziland (1968), Tonga (1970), Western Samoa (1970) Fiji (1970), Bangladesh (1972), the Bahamas (1973), Grenada

Constant elements in the conduct of foreign relations in Canadian embassies and consular offices include: formal contact and negotiation with governments, assessment of current developments, promotion of trade, granting of visas, and advice and protection for Canadians abroad.

(1974), Papua New Guinea (1975), Seychelles (1976), Solomon Islands (1978), Tuvalu (1978), Dominica (1978), St. Lucia (1979), St. Vincent (1979) and Kiribati (1979). Nauru, St. Vincent and Tuvalu have special membership in the Commonwealth with all the advantages of membership except attendance at heads of government meetings. Through their association with Britain, which has retained responsibility for foreign affairs and defence, the West Indies Associated States of Antigua and St. Kitts-Nevis-Anguilla are also associated with the Commonwealth, as are the British dependencies and external territories of Australia and New Zealand.

Membership in the Commonwealth is an important aspect of foreign policy. Canada supports its expansion and development as an effective association working for international peace and progress. Canadian objectives have remained constant: to strengthen the association, to encourage more active participation by members, and to assist its development as a vehicle for practical co-operation. The organization has no binding rules; decisions are by consensus rather than formal vote.

A Commonwealth secretariat in London organizes and services official Commonwealth conferences, facilitates exchanges of information between member countries and collates their views. Canada's assessment to the 1979-80 budget of the secretariat was 19.2% of the total, or approximately \$1.2 million. In 1978-79 Canada contributed over \$17 million to many other Commonwealth institutions and programs, with particular emphasis on a Commonwealth fund for technical co-operation (\$7.8 million), a Commonwealth youth program (\$577,000), a Commonwealth foundation (\$504,000) and a Commonwealth scholarship and fellowship plan (\$2.6 million).

An important duty of the secretariat is organization of Commonwealth heads of government meetings held every two years. Of approximately 50 Commonwealth conferences in 1979, almost half were in the non-governmental sector, such as the 25th Commonwealth parliamentary conference in New Zealand. Major governmental meetings in 1979 included the Commonwealth heads of government meeting in Lusaka, Zambia, a Commonwealth finance ministers meeting in Malta, and a Commonwealth ministerial meeting on industrial co-operation in India.

Canada and "la Francophonie"

20.2.2

The term "la Francophonie" generally describes countries whose language is wholly or partly French. This term has also been used to designate a movement aimed at

providing the French-language world with an organized framework and functional structures.

The federal government fosters the strengthening of ties with francophone countries. In the last few years relations with French-language countries of Europe have been considerably expanded and diversified, complemented by the establishment of ties with the French-language countries of the Third World. Development aid remains an important activity.

Canada also participates in multilateral organizations such as the Agency for Cultural and Technical Co-operation, of which it is a founding member. At the agency's fifth general conference, in Abidjan, Ivory Coast, in December 1977, it was agreed to develop scientific and technical co-operation within the agency, following the resolutions prepared at a conference of ministers responsible for science and technology held in Luxembourg in September 1977. The conference agreed to launch a special development program based on voluntary contributions from approximately half of the participating countries. Canada is a main contributor to this program which has proved to be a successful tool of co-operation especially for the African countries involved.

The December 1979 conference also reaffirmed the principle of regrouping the agency's programs around three main cores — development, education and scientific and technical co-operation, as well as promotion of national cultures and languages.

Canada is a member of the conference of ministers of education of French-language countries; at the annual session held in Quebec in April 1979, Quebec, Ontario, New Brunswick and Manitoba were represented.

Canada is also a member of the conference of ministers of youth and sports of French-language countries. In October 1978 a delegation to Paris was led by the Canadian ambassador to France, accompanied by representatives from Quebec, New Brunswick and Ontario.

The federal government is not alone in its efforts to draw francophone countries closer. On the bilateral level, the provinces take part in joint commissions and in the implementation of Canadian government aid programs. On the multilateral level, New Brunswick, Ontario, Manitoba and Quebec participate in some of the agency's activities. Since 1971, Quebec has had the status of a participating government within the agency's institutions, activities and programs. Since 1977 New Brunswick has had similar recognition.

Various private French-language associations also work to develop relations between their members around the world. The agency has stimulated their activities and led to the creation of a number of new organizations. The Canadian government supports several that are either Canadian or have significant Canadian participation. The most recent of these institutions is the International Council of French speaking Radio and Television which was formally constituted in June 1978.

20.2.3 Canada and the OECD

The Organization for Economic Co-operation and Development (OECD) was established in Paris in September 1961 to succeed the Organization for European Economic Co-operation (OEEC) founded in 1948 by the countries of Western Europe to facilitate reconstruction of their war-shattered economies and to administer the Marshall Plan. With the establishment of the OECD, Canada and the United States and later Japan (May 1964), Australia (June 1971) and New Zealand (May 1973) joined with the countries of Western Europe to form a major intergovernmental forum for consultation and co-operation among the advanced industrialized nations in virtually every major field of economic activity. At present 24 countries are full members while Yugoslavia has a special status entitling it to participate in certain activities.

The aim of the OECD is to facilitate the formulation of policy approaches which are conducive to stability, balanced economic growth and social progress of both member and non-member countries. The organization assembles and examines knowledge relevant to policy-making and is a forum, meeting the year round, for exchange and analysis of ideas and experiences from all member countries.

The organization plays a significant role in harmonizing international economic and financial policy and is the main area where industrialized nations hold consultations on

questions of development assistance. The original focus on more traditional economic, trade and development matters has expanded and new activities have been undertaken in agriculture, the environment, industry, science and technology, international investment and multinational enterprises, social affairs, manpower and education. The International Energy Agency (IEA) established within the framework of the OECD in November 1974, plays an important role in four main areas: emergency oil sharing, consultations on the oil market, promotion of the accelerated development of new sources of energy, and relations between oil consuming and oil producing countries. Another agency of the OECD, the Nuclear Energy Agency which celebrated its 20th anniversary in 1978, has been involved in the co-ordination and exchange of views of the technical aspects of nuclear power.

The OECD brings together government officials and representatives of private business, labour unions, universities and other non-governmental bodies at the international level. Within Canada, the Canadian Business and Industry International Advisory Committee, comprising representatives of the Canadian Chamber of Commerce, the Canadian Exporters' Association, the Canadian Manufacturers' Association, the Canadian chapter of the International Chamber of Commerce, the Canadian Association for Latin America, and the Pacific Basin Economic Council, was first established in 1962 and later reorganized in 1977 to ensure input from the business community. Arrangements exist for consultation with Canadian labour organizations, universities and other non-governmental bodies. Representatives of provincial governments attend OECD meetings when subjects of particular interest to the provinces are being discussed.

A number of OECD committees and working groups are chaired by Canadians and the Canadian ambassador and permanent representative to the OECD is vice-chairman of the executive committee. Canadians also held senior positions in the secretariat, including president of the development centre and director of the environment directorate.

Canada and the United Nations

20.2.4

Since the inception of the United Nations, support for the UN system has been an integral part of Canadian foreign policy. Canada has played a significant role in the General Assembly and is a member of a number of its subsidiary bodies including the special committee on peacekeeping operations, the committee on disarmament, the committee on the peaceful uses of outer space, the United Nations scientific committee on the effects of atomic radiation, the committee on contributions and the board of auditors. At the beginning of 1979, the General Assembly had 147 members and was close to achieving universal membership.

In 1977 Canada served on the Security Council for the fourth time. Canada was previously on the Security Council in 1948-49, 1958-59 and 1967-68. Each term is two years long; Canada's most recent term ended December 31, 1978.

On the 12 occasions that UN troops have been dispatched to deal with threats to peace and security, Canada has actively participated. In 1978 over 1,500 Canadians were involved in UN peacekeeping, the largest commitment being to the United Nations force in the Sinai, where over 850 specialists of the Canadian forces were employed in logistics support. A similar role was being performed by more than 150 Canadians in the United Nations force in the Golan Heights area. In Cyprus, Canada provided infantry to patrol and monitor existing arrangements between the disputants.

Canada contributed close to \$6.5 million to peacekeeping in 1979. At the same time, Canada actively sought equitable reimbursement arrangements for countries participating in UN peacekeeping forces. Standard scales of reimbursement for each of the troop-contributing countries have been adopted for the UN forces in the Sinai and the Golan Heights. This is a significant advance over the uneven reimbursement scales of previous peacekeeping operations.

Canada has also served at regular intervals on the third principal organ of the UN, the Economic and Social Council. Canada's most recent term on ECOSOC was 1975-77. Generally, two sessions of the council are held annually, one in New York to discuss

social and humanitarian questions, and one in Geneva to examine economic questions including food problems and international co-operation. The council is also charged with co-ordinating the work of some 167 subsidiary bodies of the UN system. Examples of those on which Canada is represented are: the governing council of the UN environment program, the commission on narcotic drugs and the committee on science and technology for development.

In recent years the UN has devoted more time to human rights, and new declarations, conventions and covenants have been promulgated. In 1976 four international human rights instruments came into force: the international covenant on economic, social and cultural rights; the international covenant on civil and political rights; the latter's related optional protocol; and the international convention on the suppression and punishment of the crime of apartheid. Canada has encouraged the preparation of such instruments and has stressed building better mechanisms for effective enforcement of standards. To emphasize Canada's commitment, special importance has been placed on securing membership on UN human rights bodies. During 1978 Canadians served on the commission on human rights and the UN human rights committee.

Canada is the eighth largest contributor to the UN, and in 1979 was assessed 3.04% of the regular budget or in dollar terms nearly \$17.2 million. Canada also makes voluntary contributions to the United Nations development program, the United Nations high commissioner for refugees, the United Nations children's fund, the United Nations relief and works agency for Palestine refugees, the world food program, the United Nations institute for training and research, the United Nations educational and training program for southern Africa, the United Nations fund for population activities, the committee on racial discrimination, the trust fund for South Africa and the fund for drug abuse control. The United Nations development program is one of the largest of these, and has a team leadership function in co-ordinating development activities in the UN system. Canada's voluntary donations in both cash and commodities to various UN programs totalled nearly \$210 million in the 1978-79 fiscal year.

20.2.4.1 Canada and disarmament

Canada is an active member of the various deliberative and negotiating international bodies concerned with disarmament. Since the reorganization of these bodies on the recommendations of the United Nations special session on disarmament (UNSSOD), more countries have become involved in the pursuit of arms control and disarmament. As a member of the conference of the committee on disarmament, Canada took a seat on the newly constituted committee on disarmament (CD). This 39-nation body is the international negotiating forum for disarmament, and four of the five nuclear weapon states are currently represented on it. The UNSSOD suggested that the disarmament committee seek agreement on a comprehensive ban of nuclear weapons testing, including underground tests, and a ban on the development, production and stockpiling of chemical weapons.

20.2.4.2 Specialized agencies

Canada is a member of the specialized agencies of the UN, and is the host country of one, the International Civil Aviation Organization. Canada maintains permanent missions to the UN headquarters in both New York and Geneva, and has accredited representatives to agencies located in Paris (UNESCO), Rome (FAO), Nairobi (UNEP) and Vienna (IAEA and UNIDO). The contributions of these agencies have been one of the greatest strengths of the UN system.

The World Bank Group, consisting of the International Bank for Reconstruction and Development (IBRD) or World Bank, the International Finance Corporation and the International Development Association, is by far the largest of the multilateral aid-giving institutions. A brief summary of the agencies follows:

The International Labour Organization (ILO) originally established with the League of Nations in 1919 became a specialized agency of the UN in 1946. It brings together government representatives, employers and workers from 136 member states (1978) to

promote social justice by improving living and working conditions in all parts of the world. Canada has been a member of the ILO from its inception and as a leading industrial state has been assigned a non-elective seat on the governing body.

The Food and Agriculture Organization (FAO) established in 1945 is one of the largest of the specialized agencies, with 143 members. Raising the nutrition levels and living standards of its member countries and improving production and distribution techniques for food, agriculture, fishery and forest products are two of its objectives. The FAO secretariat provides advisory services, collects and publishes agricultural and fisheries statistics, and organizes international conferences and meetings of experts.

FAO has headquarters in Rome and offices in Washington, Bangkok, Rio de Janeiro, Santiago and Cairo. Canada participates in FAO functions and is a member of the FAO council, the committee on commodity problems, the committee on fisheries, the consultative subcommittee on surplus disposals, the FAO group on grains, the North American forestry commission and other FAO bodies. The FAO-WHO food standard program is administered by an executive committee of which Canada is a member.

The world food program was established under the joint auspices of the FAO and the UN to provide food aid on a multilateral basis for emergency relief, including the feeding of children, and to promote economic and social development. Its approved target for pledges for 1978-79 was \$950 million. Canada pledged \$190 million to the two-year program and is the second largest contributor. A Canadian and former chief commissioner of the Canadian Wheat Board is executive director of the program.

The World Health Organization (WHO), with 151 members and two associate members, is a directing and co-ordinating authority on international health matters. The objective is the attainment by all peoples of the highest possible level of health; WHO provides advisory and technical services from its Geneva headquarters to help countries develop and improve their national health services.

The United Nations Educational, Scientific and Cultural Organization (UNESCO) was established in 1946 to contribute to peace and security by promoting collaboration among nations through education, science and culture to further universal respect for justice, the rule of law, human rights and fundamental freedoms. Its headquarters is in Paris and membership is 144 states.

UNESCO has three main components — a general conference which is the policy-making body, an executive board and a secretariat. Representatives from member states make up the general conference which meets every two years.

The International Civil Aviation Organization (ICAO), with headquarters in Montreal, was established in 1947 to promote the safe, orderly and economic development of international civil aviation. It had a membership of 142 in 1978. Canada has been a member of the 30-nation council, the governing body of ICAO, since its inception, as a state of chief importance in air transport.

The International Telecommunication Union (ITU), founded to oversee application of the international telegraph convention of 1865 and the international radio and telegraph convention of 1906, is concerned with international co-operation for improvement and use of telecommunications for the benefit of the general public; it has 154 member countries. Canada is represented on the 36-member administrative council, the executive organ of the ITU.

The World Intellectual Property Organization (WIPO) came into being in January 1974 to protect intellectual property, such as patents and copyright, and to ensure administrative co-operation among the 11 organizations or unions established for these purposes.

The World Meteorological Organization (WMO), a specialized agency of the UN since 1951, has evolved from an international meteorological organization founded in 1878; in 1978 WMO had 148 members. One of its major programs is the world weather watch for developing an improved worldwide meteorological system and environment. Canada is represented on the organization's executive committee.

The Inter-Governmental Maritime Consultative Organization (IMCO) was established in 1959 to promote international co-operation on technical shipping problems and the adoption of the highest standards of safety and navigation; its membership in 1978 was 137. IMCO exercises bureau functions for international conventions of safety of life at sea, prevention of pollution of the sea by oil, and facilitation of international maritime traffic. Canada is a member of both the IMCO council and the maritime safety committee.

The Universal Postal Union (UPU), one of the oldest and largest of the specialized agencies, was founded in Berne in 1874 with the principal aim of improving postal services throughout the world and promoting international collaboration. It has 162 members. A universal postal congress meets every five years to review the universal postal convention and its subsidiary instruments. In the interim, UPU activities are carried on by an executive council, a consultative committee on postal studies and an international bureau. Canada was elected to the executive council in 1974 during the 17th congress in Lausanne.

The International Monetary Fund (IMF), created at the Bretton Woods conference in 1944 and established in 1945, was designed to facilitate expansion of world trade and payments as a means of raising world standards of living and of fostering economic development. It promotes stability and order of exchange rates, and provides financial mechanisms for balance of payments assistance to enable member countries to correct temporary imbalances with a minimum of disturbance to the international monetary system. The original membership of 45 countries has grown to 138, of which over 100 are classified as developing.

Canada's participation in the IMF is authorized under the Bretton Woods Agreement Act of 1945. The SDR (special drawing rights) has been defined as being equal in value to a fixed basket of 16 currencies, one of which is the Canadian dollar. The Canadian quota and subscription is SDR1.2 billion in 1979. Fund holdings of Canadian dollars as of December 31, 1978 amounted to the equivalent of SDR401 million or approximately 29.5% of the Canadian quota. The reserve position of Canada in the IMF at the end of 1978 amounted to SDR427.4 million of which SDR111.6 million represented loans by Canada to the oil facility. The oil facility assists member countries in financing deficits arising from cost increases of imports of petroleum products.

The International Bank for Reconstruction and Development (World Bank), also originated at the Bretton Woods conference of 1944. Its early loans were made to assist in post-war reconstruction of Europe but it has played an increasingly important role in providing financial assistance and economic advice to less-developed countries. It has become the world's largest multilateral source of development finance.

Most World Bank loans are made to finance roads, rails, ports and electricity generation and transmission which provide the framework basic to a country's economy but which generally do not attract private investors. Increasingly, however, more emphasis has been given to other sectors such as agriculture, rural development, telecommunications, education, water supply and sewage.

In 1978 Canada's subscription to the World Bank was the equivalent of \$1,147 million in current US dollars out of a total for all countries of US\$31,248 million. Only 10% of each subscription is paid in, however, with the balance remaining as a guarantee against which the bank is able to sell its own bonds in world capital markets.

The International Development Association (IDA) was established as an affiliate of the IBRD in 1960. Its resources come mainly from governments in the form of interest-free advances, enabling it to make loans on very soft terms (no interest and 50 years to repay). IDA lends to member countries with per capita income less than \$375 a year.

Since IDA cannot borrow from world capital markets, its loanable resources have been derived largely from budgetary allocations from its member governments, principally the developed-country members. As a developed country, Canada had paid in US\$862.4 million to the end of April 1979.

The International Finance Corporation (IFC), established in 1956 as an affiliate of the IBRD, assists less-developed member countries to promote growth of the private

sector of their economies. IFC provides risk capital for productive private enterprises in association with private investors and management, encourages development of local capital markets, and stimulates international flow of private capital. IFC makes investments in the form of share subscriptions and long-term loans, carries out standby and underwriting arrangements and provides financial and technical assistance to privately controlled development finance companies. Of IFC's total subscribed capital of US\$1.33 billion, Canada provided US\$3.6 million. IFC finances its activities through loans from its parent institution, the World Bank.

The International Atomic Energy Agency (IAEA) was created in 1957 as an autonomous international organization under the aegis of the UN which has empowered it to try to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world. In 1978, membership consisted of 106 states. Because Canada has been designated as one of the members most advanced in nuclear technology, including the production of source materials, a Canadian representative has served on the board of governors since the agency's inception.

Conferences and symposia, dissemination of information and provision of technical assistance are among the methods adopted to carry out the IAEA's functions. With rapid expansion in the use of nuclear power, much activity is devoted to this field as well as to the use of isotopes in agriculture and medicine. Another significant role is development and application of safeguards to ensure that nuclear materials supplied for peaceful purposes are not diverted to military uses. Under terms of a treaty for the non-proliferation of nuclear weapons, each non-nuclear weapons state adhering to the treaty was to conclude an agreement with the IAEA providing for safeguards on its entire nuclear program. The IAEA also imposes safeguards pursuant to agreements relating to individual nuclear facilities. Agency inspectors have carried out safeguard inspections in Canada and more than 60 other countries. Canada contributed \$1.6 million to IAEA in 1978 or approximately 2.7% of the total budget.

World regional activities

20.3

Canada and the United States

20.3.1

There is no more important external relationship for Canada than that with the United States. Because of geography and economic and social patterns, the two countries frequently meet to discuss various aspects of governmental policies and programs. Besides informal consultations, there are official and technical committees in which Canadian and US officials discuss defence and transboundary environmental matters. The International Joint Commission, an independent agency, was established by the US and Canada to deal with regulation of flows of boundary waters and the abatement of transboundary air and water pollution. Canada and the US have a long history of defence co-operation through a permanent joint board on defence and through NATO.

Canada and the US also work together on international questions in multilateral organizations such as the UN, the OECD, GATT, the IMF and others in which both countries are active members.

In trade, each is the other's best customer, and in 1978 two-way trade was approximately \$72 billion. Canada sells to the United States about 70% of all exports and buys from the US about 20% of all US exports.

Canada and the Caribbean

20.3.2

Canada has long enjoyed close relations with the countries of the Commonwealth Caribbean. An important new phase began in January 1979 when Canada signed a trade and economic agreement with the countries of the Caribbean Commonwealth market (CARICOM). The agreement was signed in Jamaica by the under-secretary of state for external affairs who also visited Barbados and St. Lucia.

In 1979 Canadian investment in the region was estimated at approximately \$450 million; Canadian imports rose moderately from \$140 million and exports rose to \$283 million. Canadian bilateral assistance to the Caribbean, which is the highest per capita recipient area for Canadian aid, is expected to approximate \$31 million in loans and

grants in 1979. Development assistance has been concentrated in the sectors of education, air transport, water supply and agriculture (including forestry). On a multilateral basis funds have been made available through various organizations including the United Nations and the Caribbean Development Bank. Canada is a member of the Caribbean Group for Co-operation in Economic Development formed under the auspices of the World Bank.

Canadian permanent residents number several thousand throughout the Caribbean. Tourism is increasing in the area and Canadians are the most numerous in many cases. There are Canadian high commissions in Jamaica, Trinidad and Tobago, Guyana and Barbados; these four countries and Grenada maintain high commissions in Ottawa. There is also a commissioner for the Eastern Caribbean in Montreal who represents three West Indies Associated States (Antigua and St. Kitts-Nevis-Anguilla) and Montserrat.

20.3.3 Canada and Latin America

Canada maintains diplomatic relations with all Latin American countries through 13 resident missions and dual or multiple accreditation from those missions. In addition, Canada is associated with the inter-American system through membership of observer status in many inter-American institutions including a permanent observer mission to the Organization of American States.

In 1978 and early 1979 Canadian government officials visited Cuba, Colombia, the Dominican Republic, Argentina, Brazil, Ecuador, Mexico and Venezuela in various capacities. Ministerial missions from Latin America came to Ottawa also.

Canada's trade with Latin America continued to rise. In 1978, it rose by 12.3%; exports jumped 22.5%, from \$1.6 billion in 1977 to \$2 billion in 1978 and imports increased by 4.8%, from \$2.2 billion to \$2.3 billion. Canada's trade deficit declined from \$613 million to \$376 million during the same period.

The Canadian International Development Agency (CIDA) provides direct development assistance to the poorer countries of the area to help them achieve their social and economic objectives. CIDA also participates in multilateral assistance projects with various inter-American institutions. The Export Development Corporation (EDC) increased its presence in Latin America by granting a credit line of \$1.5 billion to Mexico.

At the multilateral level, Canada is an active member of many inter-American organizations, namely: the Pan American Institute of Geography and History, the Pan American Health Organization, the Inter-American Institute for Agricultural Sciences, the Inter-American Statistical Institute, the Inter-American Centre for Tax Administrators, the Centre for Latin American Monetary Studies and the Postal Union of the Americas and Spain. Canada supports various technical and professional inter-American organizations. In April 1978, Canada hosted the annual meeting of the Inter-American Bank.

20.3.4 Canada and Europe

Canada's cultural and social ties with Western Europe and shared commitment to its security through membership in the NATO Alliance, have over the last few years been expanded by placing a new emphasis on the development of an enhanced economic, trade and commercial relationship. The achievement of this objective is a result of the increased importance of the European Economic Community (EEC), which has become the world's largest trading bloc.

Canadian activities in 1978 were directed toward the development and strengthening of political, economic and commercial relations. In political matters, co-operation was actively promoted through regional and international conferences, high-level official visits and ministerial meetings.

Canadian efforts in 1978 and 1979 were directed toward broadening and deepening bilateral and multilateral relationships. The development of political relations was actively promoted through a series of regional and international conferences, high-level official visits and ministerial meetings. Canadian participation at the OECD Ministerial Council Meeting, the Bonn Economic Summit and other international conferences such

as the multilateral trade negotiations and the Law of the Sea Conference in Geneva were areas which brought economic concerns into sharper focus. Through meetings of joint economic commissions and exchanges of industrial missions, Canada continues to devote priority to greater trade and investment between Canada and Western Europe.

Canada and the Eastern European states have in recent years increased trade, scientific and technological co-operation as well as cultural exchanges. Canada participated with the 35 signatory states of the Helsinki Final Act in the follow-up meeting of the conference on co-operation and security in Europe, held in Belgrade, Yugoslavia from October 4, 1977 to March 9, 1978.

In January 1978 a Canada-USSR mixed commission met in Ottawa to draw up a new program of scientific, academic and cultural exchanges and co-operation for 1978-79. This is the fourth program of exchanges under the terms of a Canada-USSR general exchanges agreement since it was signed in Ottawa in 1971. With other Eastern European countries Canada has worked for mutually beneficial bilateral relations through resident diplomatic missions in Prague, Warsaw, Belgrade, Budapest and Bucharest and through non-resident ambassadors accredited to Bulgaria and the German Democratic Republic.

Canada and the Middle East

20.3.5

Canada has consistently attempted to follow a policy of balance and objectivity between the parties to the Arab-Israeli dispute. Over the years, Canada has supported the efforts of the UN Relief and Works Agency to alleviate the plight of Palestine refugees and has contributed to the maintenance of the ceasefire that followed the war of October 1973 by providing the largest national contingent to the United Nations peacekeeping forces.

Many of the major oil-exporting countries of the Middle East have put their increased revenues to use by expanding their developmental projects. In addition, some have sought to employ a part of their surpluses in assisting other countries that lack such valuable resources. These countries are becoming more aware of Canada's potential as a reliable supplier not only of traditional but also of more sophisticated goods and services. In 1978 Canadian exports to the Middle East and North Africa were valued at \$870 million, while the value of Canada's imports from this region, mainly of oil, reached \$1,615 million.

Canada and Africa

20.3.6

Direct relations were established with former British colonies in Africa as they became independent members of the Commonwealth. Increasing contacts and diplomatic relations with the newly independent French-language African states soon followed. Canada now maintains diplomatic relations with almost all the independent African states and through resident Canadian missions in 14 countries. The development of diplomatic and commercial relations has been accompanied by a significant and growing program of Canadian development assistance to Africa. This program directed approximately \$210 million in assistance to the African continent in 1977-78 and approximately the same amount in 1978-79. Canadian exports to Africa were valued at \$258 million during 1978-79.

Canada and the Asian and Pacific Region

20.3.7

Japan is Canada's second largest national trading partner; a total of \$5.3 billion in bilateral trade was achieved in 1978. Since 1974 conscious and vigorous efforts have been made to give greater depth and texture to our overall relationship. The framework for economic co-operation and the cultural agreement, both signed in 1976, have provided two important mechanisms through which these efforts have been channelled. The frequency and quality of contacts across the broad front of political, economic, cultural, academic and media relations have intensified to the advantage of both nations.

China's modernization plans have provided new opportunities for the development of Canada-China relations. In 1978 trade with China increased by 30% over 1977 to approximately \$600 million; prospects for further growth are considered good on the basis of continuing wheat sales supplemented by industrial raw materials and manufactured goods. Cultural and scientific exchanges with China continue apace, and a

new dimension of co-operation was opened with agreement in principle to accept approximately 100 Chinese scholars in 1979 for advanced training at selected institutions in Canada.

Canada-Korea relations have continued to develop in parallel with the Korean economy. As the major growth factor, trade totalled close to \$580 million in 1978, an increase of 20% over 1977. The visit of the Korean foreign minister to Canada in February 1979 marked a further step in the development of the relationship.

Canada's bilateral relations with the individual countries of South East Asia have both development assistance and commercial interest. A further dimension has been added in the evolution of Canada's relationship with the Association of South East Asian Nations (ASEAN). Indonesia, Singapore, Malaysia, Thailand and the Philippines have, through their participation in ASEAN, indicated an increased willingness to co-operate for their mutual benefit. In two formal meetings with ASEAN representatives since 1976 Canada expressed interest and support for this organization in its efforts to promote broad regional development and increase stability in the area. Two-way trade with the ASEAN countries totalled over \$590 million in 1978, a 32% increase over 1977.

Relations with Australia and New Zealand are deeply rooted in similar institutional, legislative and judicial experience as well as in shared problems and common action over several generations. More recently, new and rapidly developing mutual interests have arisen over a wide range of government activity including domestic issues, the export of uranium and nuclear safeguards, the exploration and marketing of raw materials and multilateral trade questions. Two-way trade with Australia was over \$765 million in 1978 and with New Zealand the figure exceeded \$170 million. In both cases approximately 85% of Canada's exports were manufactured goods.

India's gathering economic strength and geopolitical significance are factors in the formulation of Canadian foreign policy in Asia. Pakistan, one of the largest recipients of Canadian bilateral aid, was the focus of attention because of events within its boundaries and because of a rapidly changing situation in subcontinental Asia as a result of the Iranian and Afghanistani revolutions. Bangladesh remained a focus for Canadian international assistance programs, and Sri Lanka attracted considerable Canadian support in developmental projects. Fundamental to the pursuit of specific Canadian policy concerns is the continuing political dialogue with countries in the area.

20.4 Canadian development assistance programs

20.4.1 The Canadian International Development Agency (CIDA)

CIDA is responsible for the operation and administration of Canada's international development assistance program. In the 1978-79 fiscal year Canada spent \$1.16 billion on international development co-operation, an increase of \$115 million over 1977-78. Of the total, \$560 million went to bilateral assistance programs, \$491 million to multilateral assistance programs and \$63 million to special programs; this assists the work of Canadian and international non-governmental organizations and provides incentives for the Canadian private sector to invest in developing countries. Remaining funds (\$35 million) went to the International Development Research Centre (IDRC), and to other programs such as CIDA scholarships for Canadians taking postgraduate degrees in international development and related fields.

CIDA's bilateral program is divided into three types of assistance — technical, economic and food aid — and five regional programs. In 1978, a total of 1,138 students and trainees from developing countries studied in Canada, 986 Canadian technical assistants worked overseas, and 767 students and trainees studied in their own country or in developing countries other than their own.

Canadian bilateral economic assistance is divided almost evenly between grants and loans. Most loans are extended for 50 years and are without interest, with no repayment required for the first 10 years. A few loans are offered for 30 years, with 3% interest and seven years' grace before first payment.

CIDA's program in Asia is Canada's largest (\$227 million in 1978-79) and oldest regional bilateral aid program. Since 1951 Canada has provided more than \$2.4 billion in

bilateral aid, most of it directed to Bangladesh, India, Indonesia, Pakistan and Sri Lanka. Traditional forms of assistance have included shipments of food and essential commodities, plus infrastructure projects involving dams, power transmission, transportation and communications. More recently, a new generation of projects has emerged that put more emphasis on rural development. Priority over the next five years will go to agriculture and social development.

Canada's next largest bilateral program is in francophone Africa, where disbursements for 1978-79 totalled \$130 million. Canadian aid began there in 1961 and now totals \$783 million. In the eight countries of the Sahel region, assistance has been provided in the transportation sector to open up the countries by building roads and railway lines. Canada is also assisting rural farmers engaged in subsistence agriculture. Another type of assistance that is more trade-related, with emphasis on industrial co-operation, is now being undertaken with the middle-income countries of Algeria, Tunisia and Ivory Coast.

Canadian bilateral assistance to Commonwealth Africa emphasizes the needs of the rural poor. Rural-development-related projects accounted for 60% of the 1978-79 total disbursement figure of \$107 million. As in francophone Africa, CIDA is responding to the continent's particular need for infrastructure: transportation and public utilities will take on more importance in Canadian programs over the next few years. Tanzania, Ghana, Malawi and Zambia are the main recipients of Canadian aid in Commonwealth Africa, which has reached a total of \$807 million since the program began in 1959.

The Canadian program of assistance in Latin America is the most recent, dating from 1970. Total disbursements for 1978-79 were \$47 million, bringing the total amount spent in Latin America to \$195 million. As in other regions, rural development is the most important sector. Of the total funds disbursed, 20% went to Haiti for an integrated rural development project.

Canadian bilateral assistance to the Caribbean totalled \$35 million in 1978-79, and emphasizes employment generation, particularly in the agriculture and manufacturing sectors. Tourism is also vitally important to the region and CIDA has provided assistance to improve airport facilities, communications links and water systems. Total aid since the program began in 1958 has reached \$285 million.

Through multilateral assistance Canada joins with other donor nations to provide a level of development that is beyond the scope of individual countries. CIDA funds for multilateral programs are channelled through UN agencies, financial institutions such as the World Bank and regional development banks such as the African Development Bank, and regional institutions. There are about 65 programs receiving Canadian funds, and while the organizations are responsible for the administration of projects, Canada participates in their policy-making processes and ensures that the major criteria set out in its own development strategy are met. During the fiscal year 1978-79, Canada's contribution to multilateral organizations was \$491 million.

Canadian food aid provided through multilateral agencies in 1978-79 was valued at \$98 million. The largest part of it went to the UN world food program.

In 1978-79 CIDA's non-governmental organization (NGO) program provided over \$55 million to support 195 NGOs carrying out 1,719 projects in 105 countries. CIDA supports NGO projects that contribute to development by creating jobs or developing human resources, and foster self-reliance by making maximum use of local human and financial resources and cultivating leadership potential.

A program was created in 1974 to channel Canadian aid to the Third World through internationally constituted and managed NGOs. Disbursements for 1978-79 were \$7.5 million for 99 projects, mostly in social development and community services.

In an industrial co-operation program CIDA encourages the Canadian private sector to establish or expand operations in developing countries. It also assists developing countries to create an environment conducive to industrialization and to earn foreign exchange. Disbursements for 1978-79 under this program amounted to \$460,777.

The International Development Research Centre (IDRC)

20.4.2

IDRC was established in 1970 to initiate and encourage research focused on the problems of the world's developing regions; it fosters co-operation between developing

nations as well as between the developed and the developing world. In its role as co-ordinator of international development research, it helps developing regions to build up research capabilities, innovative skills and institutions to solve their own problems.

Projects are channelled through four program divisions: agriculture, food and nutrition sciences; health sciences; information sciences; and social sciences. As at March 31, 1979 IDRC had supported 849 projects in 100 countries, requiring appropriations of \$154 million, including administrative costs. Table 20.4 gives the geographical and program distribution of the centre's projects.

A human resources program with categories of awards for both Canadians and citizens of developing countries is designed to provide individuals with the opportunity to undertake training or research in various aspects of development.

The IDRC is financed by the Parliament of Canada by means of an annual grant. In 1979-80, Parliament's grant to IDRC was \$36.9 million. Its status as a public corporation allows it to offer completely untied aid. The IDRC is not an agent of the Canadian government and its officers and employees are not part of the public service of Canada. It is governed by an international autonomous board of governors; at least 11 of the governors including the chairman and vice-chairman must be Canadian citizens. To date the 10 other members have been appointed from other countries, with six among them from developing countries. The centre submits an annual report to the Canadian Parliament through the secretary of state for external affairs.

The centre maintains a close and co-operative relationship with CIDA and has acted as manager for a number of research projects on behalf of CIDA.

CUSO and SUCO. The Canadian university service overseas (CUSO) and the Service universitaire canadien outre-mer (SUCO) recruit and send skilled individuals from all walks of life to help Third World nations train their people. They support, through volunteer participation, financial or material contributions or all three, specific development projects initiated and directed by Third World governments, groups or individuals. In Canada they seek to promote activities leading to an understanding of and action on the causes of inequitable development.

CUSO and SUCO receive 90% of their funding from government sources. CIDA provided them with a grant of \$10.1 million for the 1978-79 fiscal year. Other contributions came from individuals, church groups, professional associations, service organizations, metres for millions, provincial governments, unions, businesses and corporations.

CESO. The Canadian executive service overseas (CESO) was created in December 1967. The organization sends Canadian volunteers with expertise in business, technology and education overseas to share their knowledge with the people of the Third World, and to various parts of Canada to assist Canadian native people. Last year there were more than 550 volunteers serving abroad and in Canada, many of them in the retirement phase of life. Over the years CESO has built and maintained a roster of more than 2,400 volunteers.

CIDA provides CESO with core funding and the 1978-79 grant amounted to \$1.6 million. Other contributions were made by Canadian industry, overseas clients, the Indian and northern affairs department, and the Northwest Territories government, bringing CESO's total income for 1978-79 to about \$2.02 million.

20.5 Defence

20.5.1 The Department of National Defence

The national defence department was created by the National Defence Act, 1922. The defence minister controls and manages the Canadian forces and all matters relating to national defence establishments. He is responsible for presenting to cabinet matters of major defence policy for which cabinet direction is required. The minister continues to be responsible for certain civil emergency powers, duties and functions.

The chief of the defence staff is the senior military adviser to the minister and is charged with the control and administration of the Canadian forces. He is responsible

for the effective conduct of military operations and the readiness of the forces to meet the commitments assigned to the department.

Canada, NATO and NORAD

20.5.2

NATO. Canada was one of the 12 original signatories of the North Atlantic Treaty Organization (NATO) in 1949. Successive Canadian governments reaffirmed the view that Canada's security remains linked to that of Europe and the United States. Canada is committed to the principle of collective defence and remains convinced of the importance of NATO's role in reducing, and eventually removing, the underlying causes of potential East–West conflict through negotiation, reconciliation and settlement.

A number of major equipment procurement decisions arising from the defence structure review of 1975 were made during 1977 and 1978, the most important of which was to purchase a new fighter aircraft to replace the outdated CF-101s, CF-104s and CF-5s, with the choice expected to be made in 1980. In December 1977, cabinet approved funds for the project definition phase leading to the acquisition in the early 1980s of six new patrol frigates.

Canada participates in the mutual and balanced force reductions negotiations in Vienna. These negotiations are generally recognized as difficult because they touch on vital security interests of both NATO and the Warsaw Pact nations. Begun in 1973, the negotiations have not yet resulted in agreement, largely because of differing perceptions of the actual size of the military forces on each side. The strategic arms limitation talks between the US and the USSR neared agreement in the latter part of 1978, and expectation was being expressed that the SALT II treaty would be signed in 1979.

Members of the alliance continue to experience, in varying degrees, the impact of severe inflation and other economic problems. Under these circumstances, particular attention has been paid to the problem of maintaining an adequate defence capability in the face of serious strains on the economies of some of the allies. Alliance members, including Canada, continue to seek economies by increasing specialization in the development, production and acquisition of military equipment to avoid costly duplication of efforts.

Canada's membership in NATO continues to be a factor in the development of its political, economic and scientific-technological relations with Europe, by which Canada seeks to balance its relations with the United States. The alliance obliges both Canada and the United States to maintain a deep interest in European affairs and exemplifies the interdependence of Europe and North America. It also provides Canada with an opportunity to consult with 14 other countries (including eight of the nine members of the European community) continuously and regularly on a variety of political and military questions.

NORAD. Canada's support of collective security is not limited to its role in NATO. Through its continuing co-operative defence arrangements with the United States it participates in aerospace surveillance and warning systems, active air defence, anti-submarine defence and measures designed to protect the deterrent capacity of the United States. (See 20.5.3.3 Air command.)

The Canadian forces

20.5.3

The Canadian forces are organized on a functional basis to reflect the major commitments assigned by the government. All forces devoted to a primary mission are grouped under a single commander. Specifically, the Canadian forces are formed into National Defence Headquarters and six major commands reporting to the chief of the defence staff.

Maritime command

20.5.3.1

All Canadian maritime forces are under the commander, maritime command, whose headquarters is in Halifax. The deputy commander is the commander, maritime forces Pacific, with headquarters in Esquimalt, BC. The role of maritime command is the surveillance and control of the sea approaches of the three oceans bordering Canada, and the provision of combat-ready ships in support of Canada's commitment to NATO

and continental defence. The commander, maritime command is also the commander of the Canadian Atlantic sub-area of the western Atlantic command, under the supreme commander, allied command Atlantic. Additional roles are to support Canadian military operations as required; to conduct search and rescue operations within the Halifax and Victoria search and rescue regions (roughly, the Atlantic provinces and British Columbia); and to carry out regional commitments within these areas.

Since Canada declared the 200-mile zone effective January 1, 1977, increased maritime surface and air resources have been devoted to the surveillance and control of Canadian waters, in support of the fisheries and oceans department. A multitude of ships are identified each year and many are boarded by fisheries officers of the department, assisted by Canadian military personnel.

The naval reserve is organized in 18 divisions across Canada and provides support for maritime command at sea and ashore.

20.5.3.2 Mobile command

The role of mobile command is to provide military units suitably trained and equipped for the protection of Canadian territory, to maintain operational readiness of combat formations in Canada required for overseas commitments, and to support United Nations or other peacekeeping operations.

The forces assigned include a brigade group in the West, with headquarters in Calgary, a brigade group in the East, with headquarters at Valcartier, Que., and an air-droppable and air-portable regimental combat group, which includes the special service force with headquarters at Petawawa, Ont., the Canadian contingent of the United Nations force in Cyprus; the Canadian contingent United Nations Middle East; and one combat training centre at Gagetown, NB. Mobile command is responsible for the regional commitments for Quebec.

The militia is assigned its traditional role as a sub-component in support of the regular force. Under the present organization, militia units have been placed under either the commander of mobile command or Canadian forces communication command.

Mobile command exercises command and control of 99 militia combat units plus administrative and service units through five militia area headquarters and 21 militia districts.

20.5.3.3 Air command

With the formation of an air command on September 2, 1975 overall responsibility for Canada's military air forces was vested in one senior commander to provide greater flexibility in the employment of air power as well as to increase operational effectiveness, safety and economy.

The command's principal function is to provide operationally-ready regular and reserve air forces to meet Canada's national, continental and international commitments, and to carry out regional commitments within the Prairie region — Saskatchewan, Alberta and Manitoba as well as the northwest part of Ontario.

Air command, with headquarters at Winnipeg, consists of four functional elements: air defence, air transport and maritime air groups and 10 tactical air group.

Air defence group, with headquarters at North Bay, Ont., is responsible for maintaining sovereignty of Canada's airspace. In addition, the group provides Canada's contribution to NORAD, the joint Canada-US North American Air Defence Command.

Air transport group, with headquarters at Trenton, Ont., provides airlift resources to enable the Canadian forces to meet their commitments. It also undertakes national and international tasks as directed by the government.

Maritime air group (MAG), with headquarters at Halifax, NS, is a component of air command. The group is responsible for management of all air resources engaged in maritime patrol, maritime surveillance and anti-submarine warfare.

The commander of maritime air group, while responsible to the commander of air command, is under the operational control of the commander of maritime command

while carrying out surveillance patrol and anti-submarine roles. A close working relationship between maritime command and maritime air group enables them to use a common operations centre.

The group conducts surveillance flights over Canada's coastal waters and the Arctic Archipelago. It also provides anti-submarine air forces as part of Canada's contribution to NATO.

10 Tactical air group. Mobile command has operational control over air command's 10 tactical air group (10 TAG) headquarters with which it is co-located at St-Hubert, Que. The group operates all air resources engaged in the close support of the army. This involves fixed-wing and helicopter fire support, reconnaissance and tactical transport over the battle area.

Air reserves. The air reserve comprises four air reserve wing headquarters at Montreal, Toronto, Winnipeg and Edmonton.

Search and rescue (SAR). Search and rescue activities are co-ordinated from Victoria, Edmonton, Trenton and Halifax. Rescue co-ordination centres (RCCs) are manned by Canadian forces personnel with Canadian Coast Guard officers attached on liaison duties in all centres except Edmonton. Besides the aircraft that is specially equipped and manned for search and rescue duties, other aircraft at various locations across Canada are tasked and in some instances kept on standby to augment the SAR capability.

The Canadian forces training system. The functions of the Canadian forces training system include the planning and conduct of all recruit, trades, specialist and officer classification training common to more than one command. This group also assumes the regional commitments for the central region (Ontario).

Information on recruit and trades training, training for officers, flying training, the three Canadian military colleges, the cadet movement and other related programs is included in Chapter 6, Education.

The Canadian forces communication command

20.5.3.4

This command maintains strategic communications for the forces and, in emergencies, for the federal and provincial governments. The command also provides points for interconnecting strategic and tactical networks. It also operates the major defence department automatic data processing centres.

The 12 Canadian forces communication command militia units are centred in: Vancouver, Edmonton and Calgary; Regina and Winnipeg; Toronto and Ottawa; Montreal and Quebec City; and Saint John, Halifax and Charlottetown. Their tasks collectively include the augmentation of Canadian forces communication command in an emergency, provision of communications support to mobile command militia in peacetime emergency operations, provision of instructors for the training of mobile command unit signalers, and provision of communications support for control of mobile command militia tactical exercises.

Canadian forces northern region

20.5.3.5

With headquarters at Yellowknife, Northwest Territories, and a headquarters detachment at Whitehorse, Yukon, the northern region encompasses Yukon and Northwest Territories, including the islands in Hudson and James Bay and the islands of the Arctic Archipelago, and extends to the geographic North Pole. Its total area is in excess of 3.9 million square kilometres, representing 40% of Canada's mass. The commander northern region is responsible for regional military matters and for co-ordinating and supporting the activities of forces when they are employed in the North.

Canadian forces (Europe)

20.5.3.6

Canadian forces allocated to support NATO in Europe are under the jurisdiction of Canadian forces (Europe). These forces, located in the Black Forest region of Germany at Lahr and Baden Solingen, consist of land force and air force groups. The air group consists of three conventional attack squadrons of CF-104 aircraft.

20.5.4 Canadian peacekeeping operations

Since World War II Canada has played a vital role in co-operation with the United Nations in its capacity as a peacekeeping agency for the preservation of peace and the promotion of international security. Canadians have participated in almost all UN peacekeeping operations to date in Egypt, Israel, Syria, Lebanon, Cyprus, Korea, India, Pakistan, West New Guinea, the Congo, Yemen and Nigeria.

Nearly 900 Canadian soldiers served in the Gaza Strip following the Israeli-Egyptian crisis of 1956 until the force was disbanded in 1967. In the Congo, a 300-man signals unit provided communications for the UN force from 1960 to 1964.

Canadian participation in the international commission for control and supervision in Vietnam and Laos began in 1954. At the high point of participation in 1973, following the US military withdrawal from Vietnam, 245 Canadian forces personnel were involved in supervision of the ceasefire. The Canadian Vietnam supervisory contingent was withdrawn in July 1973 and the Laos mission was withdrawn in the spring of 1974.

Canada's largest peacekeeping commitment in 1979 was in the Middle East where Canadians participated in the United Nations emergency force (UNEF) in the Sinai, and in the United Nations disengagement observer force (UNDOF) in the Golan Heights. Canada's overall participation in UNEF and UNDOF was approximately 1,000 personnel — about 850 Canadians with UNEF and about 150 with UNDOF.

The UN force in Cyprus is another of Canada's large military commitments. Since 1964 Canadian participation included provision of a reduced infantry battalion and a Canadian element in the UN headquarters, a total of approximately 580 officers and men. In July 1974, following the trouble in Cyprus, Canada augmented the Cyprus contingent by an additional force of approximately 480 officers and men and some additional military equipment. In mid-1979 there were 515 Canadians serving in the peacekeeping force in Cyprus, and from March to October 1978 there were 115 personnel serving with the United Nations interim force in Lebanon (UNIFIL).

Other Canadian peacekeeping operations in 1979 included nine Canadian forces personnel with the UN military observer group, India-Pakistan, and 20 Canadian officers with the UN truce supervisory organization in Israel.

20.5.5 Military assistance programs

Canada assists Commonwealth and non-NATO countries by sending military training teams to those countries or by training a small number of military personnel in Canada. Training teams in the past have been sent to Ghana, Cameroon, Jamaica, Kenya, Tanzania, Malaysia, Nigeria, Zambia and others.

Canada provides training facilities for some NATO countries on a cost-recovery basis according to the provisions of the visiting forces and the NATO status of forces agreement. Under the terms of a 10-year agreement signed in 1971, British military forces train in Canada. A similar agreement was also signed with the Federal Republic of Germany in 1973. Training areas remain under Canadian command and control and all costs are paid by Britain and the Federal Republic of Germany.

Pilots from NATO countries including Denmark, Germany, Norway and the Netherlands have trained at Canadian defence establishments for many years. Canada continued to train NATO pilots from the Netherlands under an agreement in effect until July 1981.

20.6 Emergency planning

Emergency Planning Canada (EPC) came into being on April 1, 1974. It evolved from the former Canada Emergency Measures Organization. Although attached to the national defence department for administrative purposes, it receives policy direction and tasking from the Privy Council office. The authority under which EPC operates is based on a Cabinet decision of 1973.

EPC co-ordinates the planning of the federal response to natural or man-made disasters, from floods to nuclear war, that could occur in Canada, and encourages emergency planning across the nation. The premise under which EPC operates is to plan for a nationwide emergency capability which, by concentrating on the effective handling

of peacetime emergencies, will develop the base for rapid expansion, where necessary, to meet the exigencies of war.

Emergency planning for peace and war is considered part of the normal responsibility and budgetary planning of federal departments, agencies and Crown corporations. All federal government departments have nominated emergency planning officers. EPC planners analyze all departmental plans to ensure co-ordination and avoid gaps or overlaps in the total federal approach.

EPC headquarters staff is based in Ottawa. A regional director and assistant in each provincial capital are in constant touch with emergency planners in federal department branches in their regions, and with provincial emergency organizations to form a network of people across Canada who can respond to emergencies.

EPC provides funds to the provinces for certain approved emergency planning projects; gives and sponsors more than 40 courses a year in emergency planning at a federal study centre in Arnprior, Ont. for representatives from public and private sectors, including mayors and elected officials; sponsors research into various aspects of emergencies, and issues publications with subject matter ranging from hints on how to survive if trapped in a car in a severe snowstorm, to what to do in a nuclear attack; and makes films and audio-visual programs available to the public.

The director general of EPC represents Canada on the NATO senior civil emergency planning committee and in 1979 was the chairman of the NATO civil defence committee. EPC participates in regular NATO exercises. The director general also is the Canadian co-chairman of a United States — Canada civil emergency planning committee.

In 1979, EPC co-ordinated the federal government's contingency plans to ensure rapid response should debris from the American space vehicle Skylab survive re-entry into the earth's atmosphere and land in Canada. During the six months before the anticipated re-entry, EPC arranged meetings with a number of federal departments, agencies and Crown corporations, and formed federal-provincial Skylab response groups in each provincial capital.

Royal Canadian Mounted Police divisions ensured their capacity to respond quickly to any Skylab emergency. The national defence department received re-entry and tracking information from NORAD, and EPC relayed it to other departments. The Canadian forces were on standby. Search and rescue crews and helicopters were ready to provide back-up support. Customs and immigration officials at border points were alerted to facilitate entry of a NASA team and equipment if necessary. The external affairs department was prepared to handle queries and claims, should a piece of Skylab cause damage to any person or property in Canada. The transport department alerted air traffic controllers and the Canadian airline pilots, and the coast guard contacted its regional offices concerning the estimated re-entry time. Portable hospitals and emergency medical supplies of the health and welfare department were ready across Canada. A nationwide system of communications equipment was ready to provide the quickest possible response. EPC staff worked in 12-hour shifts continuously around the time of the Skylab re-entry.

As it turned out, Skylab re-entered the earth's atmosphere on July 11, 1979 near the Kerguelen Islands in the Indian Ocean, but this is one example of the co-ordinative role EPC may be required to perform.

Disaster assistance. Emergency Planning Canada administers disaster financial assistance arrangements for the finance department. These were established to assist provincial governments in dealing with the cost of a disaster. Criteria for shared costs are based on a per capita formula. Generally payments are made to restore to their pre-disaster condition public works, essential personal property of private citizens, farmsteads, and small businesses. Under the cost-sharing formula no sharing occurs unless provincial expenditures exceed an amount equal to \$1 per capita of the province's population. When a province's expenditures exceed this level, the federal assistance payable to a province is 50% of the next \$2 per capita of eligible provincial expenditures, 75% of the next \$2 per capita and 90% of the remainder. Since the inception of the program in 1970, the federal government has paid more than \$58 million in post-disaster assistance to the provinces.

Cost sharing. To encourage emergency planning, the federal government provides funds to provinces through cost sharing. The federal share cannot exceed 75% of the total to be spent on federally approved projects. In the last 10 years the federal contribution has been about \$22 million.

The federal share supports different programs in different provinces and provides for a small corps of full-time emergency planners or co-ordinators. In some provinces the money is used to organize and stage disaster exercises so that municipalities can test their emergency plans; for example, the money may be used to ensure a ground search and rescue capability.

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- 20.4 - 20.4.2 Information Division, Canadian International Development Agency; International Development Research Centre.
- 20.5 - 20.5.5 Domestic Information Programs Division, Department of External Affairs; Directorate of Parliamentary Affairs, Department of National Defence.
- 20.6 Emergency Planning Canada.

Tables

.. not available
... not appropriate or not applicable
— nil or zero
-- too small to be expressed

e estimate
p preliminary
r revised
certain tables may not add due to rounding

20.1 Canadian financial contributions¹ to the United Nations and specialized agencies, fiscal years 1976-77 to 1978-79 with totals for 1945-79 (thousand dollars Canadian)

Agency	1976-77	1977-78	1978-79	Total 1945-79
UN regular budget	9,593	13,470	17,171	129,340
Peacekeeping				
UNEF I	—	—	—	5,910
ONUC	—	—	—	9,187
UNFICYP	3,853	3,600	—	34,265
UNEF II	2,803	3,589	2,782	17,551
Social and economic programs				
UNDP	29,000	34,000	39,000	263,071
UNHCR	750	850	1,000	41,582
UNICEF	6,500	8,600	7,500	56,475
UNRWA	3,550	4,000	5,150	56,403
UNITAR	70	80	80	830
UNETPSA	225	250	275	1,399
WFP	101,400	95,000	95,000	533,149
UNFPA	5,000	7,000	7,000	32,000
Committee on Elimination of Racial Discrimination	3	5	5	26
Trust Fund for South Africa	10	10	20	100
UN Fund for Drug Abuse Control	200	200	100	1,450
UN Voluntary Fund for Environment	1,474	2,618	1,108	6,204
Specialized agencies, IAEA and GATT				
ILO	2,385	3,289	4,349	29,590
FAO	2,928	5,015	4,640	37,378
WHO	4,084	5,206	6,574	48,840
UNESCO	3,403	3,484	5,198	34,857
ICAO	498	578	661	8,336
IMCO	47	53	60	454
ITU	928	1,229	1,639	8,587
WMO	286	291	426	2,393
UPU	291	365	480	2,142
IAEA regular budget	1,236	1,648	2,431	11,758
GATT	697	805	1,249	6,649
WIPO	144	180	86	671
UN Association in Canada	55	55	55	635
Total	181,413	195,470	207,721 ^a	1,458,528 ^a

¹Canada is the eighth largest contributor to the United Nations and its related agencies.

^aIncludes other items not listed.

20.2 Canadian posts and personnel abroad, 1978-79

Region	Canadian posts, missions and offices	Countries and institutions ¹	Personnel ^a	
			Program	Support
Africa and the Middle East	25	67	188	475
English-speaking Africa	7	28	56	150
French-speaking Africa	11	22	67	141
Middle East	7	17	65	184
Asia and the Pacific	17	27	235	612
Asia	4	8	96	210
Pacific	9	12	93	188
South Asia	4	7	46	214
Europe	35	37	489	1,226
Eastern	6	8	60	209
Western (EEC members)	19	21	340	783
Western (non EEC)	10	8	89	234
Latin America and Caribbean	17	30	179	369
Caribbean	4	9	50	104
Latin America	13	21	129	265
United States	15	6	292	456
International institutions	9	19	72	132
Total	118	186	1,455	3,270

¹Countries with which Canada has diplomatic or consular relations and major international institutions.

^aProgram personnel include 1,127 Canada-based officers and 328 locally-engaged personnel. Support staff include 915 Canada-based and 2,355 locally-engaged employees of all federal departments and agencies abroad except those in international institutions, Canadian armed forces on duty in NATO and UN peacekeeping operations, and personnel overseas with Crown corporations and other government agencies, e.g. Atomic Energy of Canada Ltd., Air Canada, the Canadian Broadcasting Corp., the Canadian Commercial Corp. and the National Film Board. Not included are employees of provincial governments or CIDA technical-assistance personnel in developing countries.

20.3 CIDA disbursements by program, 1975-76 to 1977-78 (million dollars)

Program	1975-76	1976-77	1977-78
Multilateral	318.56	416.63	410.24
General UN funds	28.00	34.25	45.50
Renewable natural resources	5.78	5.15	17.36
Population and health	8.82	10.42	12.37
Education	0.41	0.50	0.43
Commonwealth and francophone programs	4.64	5.17	7.97
Refugee and relief	2.93	3.10	4.27
Trade promotion	0.38	0.50	0.50
Development banks	2.19	4.22	0.22
Other programs	3.36	1.15	1.13
Multilateral food aid	103.22	87.21	91.27
Loans and advances to international financial institutions	158.83	264.96	229.22
Bilateral	525.71	477.73	552.86
Technical assistance	52.34	61.03	54.63
Economic assistance (exclusive of food aid)	350.07	261.32	355.27
Bilateral food aid	119.32	149.44	139.08
Commonwealth scholarships and fellowships	1.99	1.94	1.88
International emergency relief	2.00	4.00	2.00
Other programs	59.24	68.98	81.96
Non-governmental organizations	31.86	37.31	44.31
Other food aid programs	—	0.86	1.67
International development research centre	27.00	29.70	34.50
Incentives to Canadian private investment in developing countries	0.11	0.93	0.25
Canadian scholarship program	0.27	0.18	0.23
Contribution to Italian earthquake reconstruction	—	—	1.00
Forgiveness of loans to least developed countries	—	—	231.89
Total	903.51	963.34	1,276.95

20.4 International Development Research Centre program projects approved to Mar. 31, 1979 (thousand dollars)

Region	Agriculture, food and nutrition sciences	Health sciences	Information sciences	Social sciences	Total
Africa	16,064	3,988	3,919	3,657	27,628
Asia	21,053	7,295	5,233	12,823	46,404
Middle East	7,508	662	972	422	9,564
Caribbean and Latin America	12,371	5,653	4,497	9,440	31,961
Global	2,629	5,154	1,495	8,052	17,330
Canada	2,475	424	2,428	11,631	16,958
Total	62,100	23,176	18,544	46,025	149,845

20.5 Canadian Armed Forces and defence budgets, 1948-79

Fiscal years ending March 31	Strength of forces at March 31			Total	Total defence appropriation \$'000
	Navy	Army	Air Force		
1948	6,860	15,885	12,017	34,762	240,814
1951	11,082	34,986	22,359	68,427	786,301
1953	15,546	48,458	40,423	104,427	2,001,852
1957	19,111	47,261	50,720	117,092	1,775,416
1962	21,500	51,855	53,119	126,474	1,685,298
1969	18,291	37,445	42,604	98,340	1,723,851
1972				84,933	1,900,145
1976				78,394	2,981,765
1978				79,656	3,770,980
1979				78,974	4,127,885
		Unified forces			

20.6 Department of National Defence expenditures, by province and outside Canada (thousand dollars)

Province or territory	Fiscal years		
	1975-76	1976-77	1977-78
Newfoundland	21,854	25,127	29,881
Prince Edward Island	31,268	34,409	34,412
Nova Scotia	370,190	404,359	446,718
New Brunswick	127,453	134,469	148,047
Quebec	475,106	498,462	563,450
Ontario	962,289	1,093,214	1,158,540
Manitoba	138,260	146,578	163,461
Saskatchewan	50,641	53,123	56,187
Alberta	237,346	246,894	248,535
British Columbia	268,912	281,410	324,078
Yukon	46	545	381
Northwest Territories	6,243	13,203	14,267
Total, Canada	2,689,608	2,931,793	3,194,957
Outside Canada	292,157	437,931	583,023
Total	2,981,765	3,369,724	3,777,980

20.7 Payments to provinces under the emergency planning financial assistance program, 1975-76 to 1979-80 (dollars)

Province or territory	1975-76	1976-77	1977-78	1978-79	1979-80
Newfoundland	47,053	46,812	50,740	55,421	58,405
Prince Edward Island	21,916	21,864	24,280	26,826	28,252
Nova Scotia	63,146	62,652	67,400	73,030	76,815
New Brunswick	54,235	54,072	58,720	63,397	66,817
Quebec	378,622	373,248	395,140	424,638	444,998
Ontario	494,598	491,124	521,700	560,048	590,685
Manitoba	74,850	74,004	79,300	85,930	90,146
Saskatchewan	68,732	68,196	73,700	79,652	83,956
Alberta	116,612	117,300	127,600	141,658	151,721
British Columbia	156,911	157,296	167,920	180,336	190,920
Yukon	6,064	16,188	18,260	20,354	21,428
Northwest Territories	17,261	17,244	19,240	21,710	22,857
Canada	1,500,000	1,500,000	1,604,000	1,733,000	1,827,000

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20.3 Information Division, Canadian International Development Agency.

20.4 International Development Research Centre.

20.5-20.6 Directorate of Parliamentary Affairs, Department of National Defence.

20.7 Emergency Planning Canada.

Banking, finance and insurance

Chapter 21

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Banking

21.1

Bank of Canada

21.1.1

Canada's central bank, the Bank of Canada, began operations on March 11, 1935, under the terms of the Bank of Canada Act, 1934, which charged it with the responsibility for regulating "credit and currency in the best interests of the economic life of the nation" and conferred on it specific powers for discharging this responsibility. Through the exercise of these powers, the Bank of Canada influences the level of short-term interest rates and thus the growth of the money supply, narrowly defined as the public's holdings of chartered bank demand deposits and currency. Revisions to the act were made in 1936, 1938, 1954 and 1967, and are included in RSC 1970, c.B-2.

The provisions of the Bank of Canada Act enable the central bank to determine the total amount of cash reserves available to the chartered banks as a group and in that way to influence the level of short-term interest rates. The Bank Act, which regulates the chartered banks, requires that each chartered bank maintain a stipulated minimum average amount of cash reserves, calculated as a percentage of its Canadian dollar deposit liabilities, in the form of deposits at the Bank of Canada and holdings of Bank of Canada notes. The minimum cash reserve requirement, which came into effect under the legislation beginning February 1, 1968, is 12% of demand deposits and 4% of other deposits. Effective January 1969, the chartered banks have been required to maintain this minimum cash reserve ratio on a half-monthly rather than on a monthly basis. The ability of the chartered banks as a group to expand their total assets and deposit liabilities is therefore limited by the total amount of cash reserves available.

A decrease in cash reserves tends to cause short-term interest rates to rise, making it more costly for the public to hold non-interest-bearing deposits and currency. An increase in cash reserves would put downward pressure on interest rates and indirectly induce the public to hold more money. Control of interest rates thus provides some control over the growth of the money supply.

There are two methods by which the Bank of Canada can alter the level of cash reserves of the chartered banks. The technique employed more often is the transfer of government deposits between the central bank and the chartered banks. The second method is the purchase or sale of government securities.

The transfer of government deposits from the Bank of Canada to the chartered banks or the payment by the central bank for the securities purchased adds to the cash reserves of the chartered banks as a group and puts them in a position to expand their assets and deposit liabilities. The more direct method of increasing bank reserves is the transfer of government deposits to the chartered banks. Such transfers, which the bank is authorized to make as the fiscal agent of the federal government, do not involve any immediate effect on security prices and yields in financial markets.

If the Bank of Canada wishes to decrease the reserves of the chartered banks, it may either transfer government deposits from accounts at the chartered banks to the government's account at the central bank or sell government securities in the market.

In using the powers at its disposal, the Bank of Canada attempts to bring about monetary conditions appropriate to both domestic and external conditions. The basic principle it relies upon to do this is that the money supply should grow along a path capable of accommodating the maximum rate of real growth consistent with continued movement toward the goal of price stability. In November 1975 the governor of the Bank of Canada announced an explicit target range for a monetary aggregate, narrowly defined as the public's holdings of chartered bank demand deposits and currency. It was

expressed as a trend rate of increase of not less than 10% but well below 15%, measured from the average level of money holdings over the three months centred on May 1975. In August 1976 the target range was lowered to 8% to 12% a year measured from the three-month average level centred on March 1976; in October 1977 the range was further lowered to 7% to 11% measured from the average level for the month of June 1977; and in September 1978 the range was decreased to 6% to 10% measured from the average June 1978 level. In December 1979, the target range was lowered to 5% to 9%, as measured from the three-month average level centred on May 1979.

Steadiness in monetary growth tends to stabilize total spending in the economy. When the trend growth in national expenditure exceeds that of money holdings, for any appreciable period, interest rates tend to rise. Consequently, firms and individuals are induced to moderate their spending. On the other hand, if expenditure is sluggish compared to the growth of money supply, there is an incentive for business and consumer spending to expand.

The emphasis on the rate of growth of the narrowly defined money supply does not mean that other indicators are being ignored by the Bank of Canada. Indeed, many other factors provide useful information on the behaviour of the economy — among them are the movements in various economic series and monetary and credit totals.

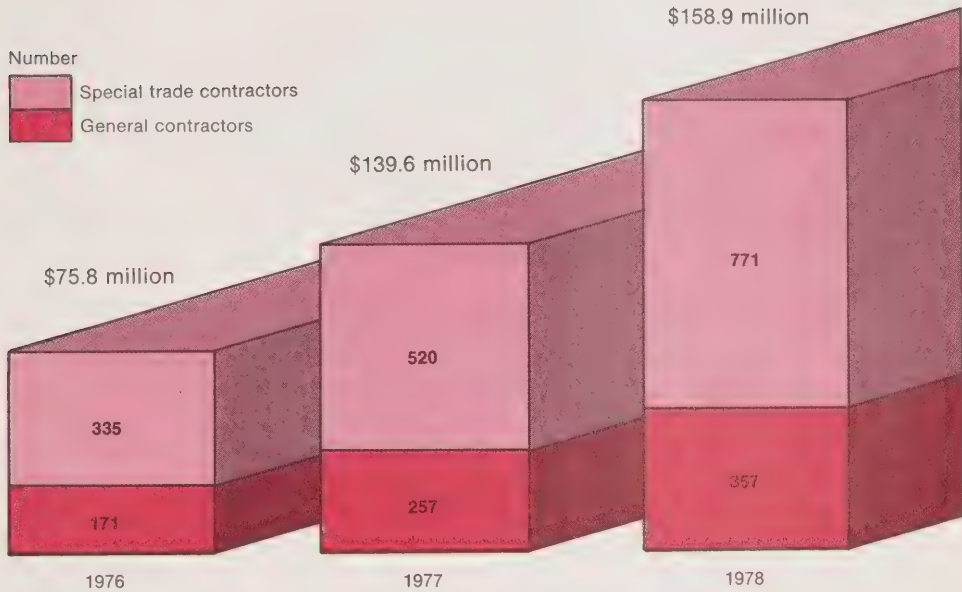
The Bank of Canada leaves the allocation of bank and other forms of credit to the private sector of the economy. Each chartered bank is free to attempt to gain as large a share as possible of the total cash reserves available by competing for deposits and to decide what proportion of its funds to invest in particular kinds of securities and in loans to particular types of borrowers. The influence of the central bank — based in essence on its power to expand or contract chartered bank cash reserves as described above — operates through financial markets affecting relative rates of return on various assets in the economy. In this impersonal and indirect fashion monetary policy has its effect on total spending in the economy.

The Bank of Canada may buy or sell securities issued or guaranteed by Canada or any province, certain short-term securities issued by the United Kingdom, treasury bills or other obligations of the United States and certain types of short-term commercial paper. It may buy or sell gold, silver, nickel and bronze coin, or any other coin, and gold and silver bullion as well as foreign exchange and may accept non-interest-bearing deposits from the federal government, the government of any province, any chartered bank and any bank regulated by the Quebec Savings Bank Act. The Bank of Canada may open accounts in other central banks or in the Bank for International Settlements; accept deposits from other central banks, the Bank for International Settlements, the International Monetary Fund, the International Bank for Reconstruction and Development, and any other official international financial organization; and pay interest on such deposits. The Bank of Canada does not accept deposits from individuals nor does it compete with the chartered banks in the commercial banking field. It acts as the fiscal agent for the federal government in payment of interest and principal and generally in respect of management of the public debt of Canada. The sole right to issue paper money for circulation is vested in the bank.

The central bank also may require the chartered banks to maintain, in addition to the legal minimum cash reserve requirement, a secondary reserve which the Bank of Canada may vary within certain limits. The secondary reserve, consisting of cash reserves in excess of the minimum requirement, treasury bills and day-to-day loans to investment dealers, cannot exceed 12%; effective February 1977, the required level was 5%. In the event the Bank of Canada wishes to introduce or increase the secondary reserve requirement, 30 days' notice to the chartered banks is required; the amount of any increase in the required ratio cannot exceed 1.0% a month except when no percentage requirement is in effect, and the increase may then be no more than 6.0%. In the case of a lowering of the secondary reserve requirement, however, the percentage change in any one month is not restricted.

The Bank of Canada may make loans or advances for periods not exceeding six months to chartered banks, or to banks to which the Quebec Savings Bank Act applies, on the pledge of certain classes of securities. Loans or advances may be made under certain conditions and for limited periods to the federal government or to any province.

Bankruptcies and insolvencies in the construction industry and estimated total liabilities, 1976-78



The bank must make public at all times the minimum rate at which it is prepared to make loans or advances; this rate is known as the bank rate. From November 1, 1956 until June 24, 1962, the bank rate was established weekly at a fixed margin of one-quarter of 1.0% above the latest weekly average tender rate for 91-day treasury bills. Bank rates since June 24, 1962 have been fixed from time to time; rates from April 7, 1967 are given in Table 21.1. The rate at October 25, 1979 was 14.0% per annum.

On May 12, 1974 the Bank of Canada announced a change in practice concerning the maximum rate at which it would enter into purchase and resale agreements with money market dealers. The practice had been to set a purchase and resale agreement rate at one-quarter of 1.0% above the average 91-day treasury bill rate at the latest weekly tender, subject to a minimum of bank rate minus three-quarters of 1.0% and a maximum at the level of bank rate. Under the new practice the maximum rate is bank rate plus one-half of 1.0%.

Assets and liabilities of the Bank of Canada at December 31, 1976-78 are shown in Table 21.2. The bank is not required to maintain gold or foreign exchange reserves against its liabilities.

Although the Bank of Canada operates with a large measure of independence, this does not mean that the government can be relieved of the ultimate responsibility for the general thrust of monetary policy. Provisions in the Bank of Canada Act of 1967 were designed to clarify this matter. They provide for regular consultation between the governor of the Bank of Canada and the finance minister as well as for a formal procedure whereby, in the event of a disagreement between the government and the central bank which cannot be resolved, the government may, after consultation has taken place, issue a directive to the Bank of Canada as to the monetary policy that it is to follow. Any such directive must be in writing, must be in specific terms, and must be

applicable for a specified period. It must be published immediately in the *Canada Gazette* and tabled in Parliament. This provision of the act makes it clear that the government must take ultimate responsibility for monetary policy but that the central bank is in no way relieved of its responsibility so long as a directive is not in effect. Such a directive has never been issued.

The Bank of Canada is under the management of a board of directors composed of the governor, the deputy governor and 12 directors. The governor and deputy governor are appointed for terms of seven years by the directors, with the approval of the Governor-in-Council. In addition to the deputy governor who is a member of the board, there may be one or more deputy governors who, although not members of the board, are appointed by the board of directors to perform such duties as are assigned by the board. Directors are appointed by the finance minister, with the approval of the Governor-in-Council, for terms of three years each. The deputy minister of finance is a member of the board but does not have the right to vote. There is an executive committee of the board composed of the governor, the deputy governor, two directors and the deputy minister of finance, who is without a vote; this committee has the same powers as the board except that its decisions must be submitted to the board at its next meeting.

The head office of the Bank of Canada is in Ottawa. It has agencies in Halifax, Saint John, Montreal, Ottawa, Toronto, Winnipeg, Regina, Calgary and Vancouver and is represented by other institutions in St. John's and Charlottetown. In addition there are representatives of head office departments in Montreal, Toronto, Edmonton and Vancouver.

21.1.2 Currency

How bank notes became the chief circulating medium in Canada prior to 1935 is described in the *Canada Year Book 1938* pp 900-905. Features of the development which then became permanent are outlined in the *Canada Year Book 1941* pp 809-810.

When the Bank of Canada began operations in 1935 it assumed liability for Dominion notes outstanding. These were gradually replaced in public circulation and partly replaced in cash reserves by the central bank's legal tender notes. Bank of Canada notes thus replaced chartered bank notes as the issue of the latter was reduced. Further restrictions introduced by the 1944 revision of the Bank Act cancelled the right of chartered banks to issue or reissue notes after January 1, 1945, and in January 1950 the chartered banks' liability for such of their notes issued for circulation in Canada as then remained outstanding was transferred to the Bank of Canada with a concurrent adjustment to the banks' deposits at the Bank of Canada.

Bank of Canada note liabilities for the years 1976-78 are given in Table 21.4. Note circulation in public hands as at December 31, 1978 amounted to \$8,074.7 million, compared to \$7,267.6 million in 1977 and \$6,572.8 million in 1976. Bank of Canada statistics concerning currency and chartered bank deposits are given in Table 21.5.

21.1.3 Coinage

Under the Currency and Exchange Act (RSC 1970, c.C-39), gold coins may be issued in the denomination of \$20 (nine-tenths fine or millesimal fineness 900) and \$100 (millesimal fineness 916.6); and subsidiary coins in denominations of \$1, 50 cents, 25 cents, 10 cents (five-tenths fine or millesimal fineness 500, silver, or pure nickel), five cents (pure nickel), and one cent (bronze — copper, tin and zinc). Provision is made for the temporary alteration of composition in the event of a shortage of prescribed metals.

Table 21.6 gives figures for the value of Canadian coins in circulation. Receipts of gold bullion at the Royal Canadian Mint and bullion and coinage issued are given in Table 21.7.

The Ottawa Mint, established as a branch of the Royal Mint under the United Kingdom Coinage Act of 1870, was opened on January 2, 1908. On December 1, 1931, by an act of the Canadian Parliament it became the Royal Canadian Mint and operated as a branch of the finance department. The mint was established as a Crown corporation in 1969 by the Government Organization Act of 1969 to allow for a more industrial type of organization and for flexibility in producing coins of Canada and other countries; to

buy, sell, melt, assay and refine gold and precious metals; and to produce medals, plaques and other devices. The mint reports to Parliament through the minister of supply and services.

On December 16, 1971, a decision was made by the cabinet to locate a new plant for the production of coin for general circulation in Winnipeg. The plant was officially opened on April 30, 1976.

Chartered banks

21.1.4

Canada's commercial banking system consists of 11 private banks: Bank of Montreal, The Bank of Nova Scotia, The Toronto-Dominion Bank, Banque Nationale du Canada, Canadian Imperial Bank of Commerce, The Royal Bank of Canada, The Mercantile Bank of Canada, Bank of British Columbia, Canadian Commercial & Industrial Bank, Northland Bank, and Continental Bank of Canada. At the end of December 1979, these banks operated 7,455 banking offices in Canada and 290 abroad. Canadian chartered banks accept various types of deposits from the public including accounts payable on demand, both chequing and non-chequing, notice deposits and fixed-term deposits. In

In 1920 there were 4,676 branches of chartered banks in Canada. The number gradually decreased during the 1930s and early 1940s to a low of 3,084 in 1943. By the end of 1979 the number had increased to 7,455.

addition to holding a portfolio of securities, they make loans under a wide variety of conditions for commercial, industrial, agricultural and consumer purposes. They also deal in foreign exchange, receive and pay out bank notes, provide safekeeping facilities and perform various other services. For the most part, these operations are carried out by the extensive network of bank branches. Head offices of the banks confine their activities largely to general administration and policy functions, the management of investment portfolios and related matters. A detailed account of the branch banking system in Canada is given in the *Canada Year Book 1967* pp 1126-1128.

All banks operating in Canada are chartered by Parliament under the terms of the Bank Act. The act regulates certain internal aspects of bank operations such as the auditing of accounts, the issuing of stock, the setting aside of reserves and similar matters. In addition, the Bank Act regulates their relationship with the public, the government and the Bank of Canada.

The Bank Act has been revised at approximately 10-year intervals; the most recent revision was enacted by Parliament early in 1967 and came into effect May 1 of that year. Because proposed revisions were still being discussed, legislation to extend the Bank Act to April 1, 1980 was passed in the House of Commons on March 22, 1979.

Chartered bank financial statistics for recent years are given in Tables 21.8 - 21.12; month-end data are available in the *Bank of Canada Review*.

History of chartered banks. Although there are fewer chartered banks now than at the beginning of the century, there has been a great increase in the number of branch banking offices. As a result of amalgamations, the number of banks declined from 34 in 1901 to 10 in 1931, and remained at that figure until the incorporation of The Mercantile Bank of Canada in 1953. In 1955 the Bank of Toronto and the Dominion Bank amalgamated as The Toronto-Dominion Bank. In 1956 Barclays Bank (Canada) amalgamated with the Imperial Bank of Canada; then in 1961 the amalgamation of the Canadian Bank of Commerce and the Imperial Bank of Canada as the Canadian Imperial Bank of Commerce reduced the number to eight, the other six being Bank of Montreal, The Bank of Nova Scotia, La Banque Provinciale du Canada, The Royal Bank of Canada, Banque Canadienne Nationale and The Mercantile Bank of Canada. The Bank of British Columbia was granted a charter by Parliament in December 1966 and commenced operations in July 1968. Unity Bank of Canada was granted a charter in November 1972 and commenced operations in 1973. Northland Bank received its charter in December 1975 and began operations in November 1976. The Canadian

Commercial & Industrial Bank was granted a charter in June 1976 and commenced operations in September 1976. Unity Bank of Canada amalgamated with La Banque Provinciale du Canada in June 1977. Continental Bank of Canada was granted a charter in April 1979 and began operations in June 1979. La Banque Provinciale du Canada and the Banque Canadienne Nationale amalgamated in November 1979 and commenced operation as the Banque Nationale du Canada. The number of branches of the chartered banks in each province at periods between 1920 and 1979 is given in Table 21.13.

Branches of individual Canadian chartered banks by province as at December 31, 1978 and 1979 are given in Table 21.14. The Canadian banks also maintain about 290 offices abroad in more than 40 countries, providing important links in facilitating trade and handling international operations.

Cheque payments. The value of cheques cashed in 50 clearing centres during 1979 reached a high of \$4,018 billion, an increase of 28.0% above the value of \$3,138 billion for 1978. All five geographic regions showed increases, with the Atlantic provinces showing an increase of 22.1%, Quebec 6.7%, Ontario 38.6%, the Prairie provinces 24.0% and British Columbia 22.2%. Payments in the two leading centres also reached new highs, Toronto advancing 41.8% and Montreal 6.1% over 1977.

21.1.5 Federal Business Development Bank

The Federal Business Development Bank was established by an act of Parliament in 1974 as a federal Crown corporation to succeed the Industrial Development Bank. Under the act, which came into force in October 1975, this bank assists the development of new or existing business enterprises in Canada by providing financial and management services. It supplements such services available from other sources and it gives particular attention to the needs of smaller businesses.

It extends financial help in various forms to new or existing businesses of almost every type which are unable to obtain required financing from other sources on reasonable terms and conditions. To qualify for this financing, a business should have investment by others to ensure their continuing commitment to the business which should have reasonable expectation of success.

The bank's management counselling service can help small businesses improve their methods. This service, supplementing counselling services available from the private sector, makes available the experience of retired business persons.

To help improve management skills in small businesses, the bank conducts management training seminars in smaller communities across Canada. It publishes booklets on a wide range of topics pertaining to the management of small business and provides information about assistance programs for small business sponsored by the federal government and others.

The head office is in Montreal and there are five regional offices, 97 branch offices and seven sub-branches across Canada. Some 98% of the loans made by the bank are approved at the branch or regional offices.

21.1.6 Other banking institutions

In addition to the savings departments of the chartered banks and of trust and loan companies, there are provincial government financial institutions in Ontario and Alberta, and the Montreal City and District Savings Bank in Quebec, established under federal legislation and reporting monthly to the finance department. Co-operative credit unions also encourage savings and extend small loans to their members.

Province of Ontario Savings Office. The establishment of the Province of Ontario Savings Office was authorized by the provincial legislature at the 1921 session and the first branches were opened in March 1922. Interest at the rate of 12.5% per annum (as at November 1, 1979), compounded half-yearly and computed on a minimum monthly balance, is paid on accounts; deposits are repayable on demand. Total deposits as at November 30, 1979 were \$504 million and the number of depositors was approximately 95,300; 21 branches are in operation throughout the province.

Province of Alberta Treasury Branches. Established in 1938, this system operates 101 branches, four sub-branches and 95 agencies throughout the province. As at March

31, 1979, deposits from customers totalled \$1,496 million while loans to individuals, merchants, corporations and municipal bodies totalled \$1,285 million. Profits for the year ended March 31, 1979, before allowances for reserves, were \$19.2 million. Of this amount \$10.5 million was transferred to the general revenue of the province. Financial services include current accounts; regular savings (chequing) and super savings (non-chequing), interest-bearing accounts; capital savings, term deposits for terms ranging from one day to five years bearing competitive interest rates; savings growth certificates (six-year term); investment certificates (one to five-year term, non-redeemable prior to maturity); agricultural loans; farm improvement loans; petroleum and natural gas loans; long-term business loans — capital financing; home improvement loans; time-plan personal loans, mobile home loans, and residential mortgage loans, the latter three all life-insured. Treasury branches are also authorized lending agents for farm improvement loans and small business loans guaranteed by the federal government.

The Montreal City and District Savings Bank was founded in 1846 and has operated under a federal charter since 1871. On October 31, 1978 it had a paid-up capital and reserve of \$43.2 million (\$34.0 million in 1977), savings deposits of \$1,331.9 million (\$1,169.8 million) and total liabilities of \$1,415.5 million (\$1,231.9 million). Assets of a like amount included \$282.2 million, (\$262.1 million in 1977) consisting of federal, provincial, municipal and other securities.

Credit unions. The first credit union in Canada was founded in Lévis, Que. in 1900 to promote thrift by encouraging saving and to provide loans to members who could not get credit elsewhere or could get it only at high interest rates. For many years growth was slow; in 1911, when the first figures were available, assets amounted to \$2 million and by 1940 they were only \$25 million. However, since that time there has been a spectacular increase. The first credit union legislation was passed in Nova Scotia in 1932 followed by legislation in Manitoba and Saskatchewan in 1937 and in Ontario and British Columbia in 1938.

Credit unions are under provincial legislation. Almost all local offices in each province belong to central credit unions operating within the province. The number of chartered credit unions in Canada at the end of 1977 was 3,926. They reported a total membership of 8.3 million and assets of \$18,929 million (Table 21.15). Quebec, with 4.4 million members and assets of \$8,424 million, accounted for 53% of members and 45% of assets of all credit unions in Canada (Table 21.16).

Outstanding loans of credit unions at year end increased 28.1% in 1977 over 1976 to reach \$13,607 million. Assets at \$18,929 million increased 25.5% and savings at \$17,715 million increased 23.5% over 1976. Membership of 8.3 million represented 35.6% of the total population.

There were 19 central credit unions in 1977; these are organized as centralized banking entities to serve the needs of local credit union members, mainly by accepting deposits of surplus funds from them and providing a source of funds for them to borrow when they cannot meet the demand for local loans. Most centrals also admit co-operatives as members. Total assets of the centrals increased 32.1% to \$4,253 million over 1976. The Credit Union National Association serves as the central organization for provincial centrals.

The centrals had combined total assets of \$4,253 million at the end of 1977 compared to \$3,219 million in 1976. Most funds are invested in securities and are financed by demand and term deposits from local credit union members. The combined total assets of local and central credit unions exceeded \$23 billion at the end of 1977.

Other financial institutions

21.2

Trust and mortgage companies

21.2.1

Trust and mortgage companies are registered with either federal or provincial governments. They operate under the federal Loan Companies Act (RSC 1970, c.L-12) and the Trust Companies Act (RSC 1970, c.T-16), or under the corresponding provincial legislation.

Trust companies operate as financial intermediaries in two areas: banking and fiduciary. Under the banking function, trust corporations can accept funds in exchange for their own credit instruments such as trust deposits and guaranteed investment certificates. This aspect of its business is often referred to as the guaranteed funds portion and differs little from the savings business of chartered banks.

Trust corporations are the only corporations in Canada with power to conduct fiduciary business. In this capacity they act as executors, trustees and administrators under wills or by appointment, as trustees under marriage or other settlements, as agents in the management of estates, as guardians of minor or incapable persons, as financial agents for municipalities and companies, as transfer agents and registrars for stock and bond issues, as trustees for bond issues and, where so appointed, as authorized trustees in bankruptcies.

Mortgage corporations may also accept deposits and may issue both short-term and long-term debentures. The investment of these funds is spelled out specifically in the acts under which most of the funds are invested in mortgages secured by real estate.

Trust and mortgage companies were established and grew rapidly under provincial legislation in the late 19th and early 20th centuries. Some companies were chartered by special acts of Parliament but it was not until 1914 that the federal government began to regulate trust and mortgage companies registered under its acts. The federal superintendent of insurance regulates the federal companies and also, by arrangement with the provinces, trust and mortgage companies incorporated in Nova Scotia and trust companies incorporated in New Brunswick and Manitoba. Companies must be licensed by each province in which they wish to operate.

Although there may be some differences among the federal and provincial acts, broad lines of the legislation are common. In their intermediary business the companies have the power to borrow or, in the case of trust companies, to accept funds in guaranteed accounts subject to maximum permitted ratios of these funds to shareholder equity. The funds may be invested in specified assets which include: first mortgages secured by real property; government securities and the bonds and equity of corporations having established earnings records; loans on the security of such bonds and stocks; and unsecured personal loans. Trust and mortgage companies are not required to hold specified cash reserves, as are the chartered and savings banks, but there are broadly defined liquid asset requirements in a number of the acts.

In the 1920s trust and mortgage companies held about half the private mortgage business in Canada but their growth rate fell off sharply because of the effect of the depression and World War II on the mortgage business. Since then strong demand for mortgage financing has led to sustained rapid expansion.

At the end of 1979 total assets of trust companies in the Statistics Canada survey were \$33,373 million compared with \$27,906 million in 1978, an increase of 20%. Trust companies have been putting a high proportion of their funds into mortgages and 73% of their total assets were represented by mortgages at the end of 1979. The trust companies had \$24,144 million in term deposits outstanding and \$5,919 million in demand deposits at the end of 1979, accounting for 90% of total funds. About 16% of demand or savings deposits were in chequing accounts. There is considerable variety among the trust companies and a few have developed a substantial short-term business, raising funds by issuing certificates for terms as short as 30 days and also operating as lenders in the money market. But the main business of trust companies in their intermediary role is to channel savings into mortgages. In addition, trust companies, as at December 31, 1979, had \$60 billion under administration in estate, trust and agency accounts. Summary statistics are given in Tables 21.18, 21.20 and 21.22.

Mortgage companies had total assets of \$12,330 million at the end of 1979 compared with \$10,285 million in 1978. Their holdings of mortgages were \$9,976 million, or 81% of total assets. To finance their investments, these companies sold \$8,202 million of term deposits and debentures and \$499 million of demand deposits.

More complete and up-to-date financial information may be found in quarterly financial statements published by Statistics Canada and the Bank of Canada, the reports of the superintendent of insurance on loan and trust companies and the reports of provincial supervisory authorities.

Small loans companies

21.2.2

Small loans companies and money-lenders are subject to the Small Loans Act (RSC 1970, c.S-11). This act, first passed in 1939, sets maximum charges on personal cash loans not in excess of \$1,500 and is administered by the federal department of insurance. Lenders not licensed under the act may not charge more than 1.0% a month. Those wishing to make small loans at higher rates must be licensed each year by the minister of finance under the Small Loans Act. The act allows maximum rates, including charges of every kind, of 2.0% a month on unpaid balances not exceeding

Strong demand for mortgage money led to steady expansion of trust and mortgage companies in Canada since World War II. At the end of 1979, total assets of trust and mortgage companies together amounted to over \$45.7 billion, compared to nearly \$38.2 billion in 1978.

\$300, 1.0% a month on the portion of unpaid balances exceeding \$300 but not exceeding \$1,000 and one-half of 1.0% on any remainder of the balance exceeding \$1,000. Loans in excess of \$1,500 are not regulated and lenders operating entirely above this limit and the larger loans of licensed lenders are exempt from the act; nor does the act regulate charges for the instalment financing of sales. Prior to January 1, 1957, the act applied only to loans of \$500 or less and the maximum interest charge allowed was 2.0% a month.

At the end of 1978, there were four small loans companies and 33 money-lenders licensed under the act (31 in 1977). Small loans companies are incorporated federally; money-lenders include provincially incorporated companies. Many small loans companies and money-lenders are affiliated with other financial institutions, principally Canadian sales finance companies and US finance or loan companies. These affiliations reflect the close relationship between instalment financing and the consumer loan business.

Statistics Canada publishes quarterly balance sheets for sales finance and consumer loan companies as a whole and does not attempt to distinguish the two groups within the industry (see *Financial institutions*, Statistics Canada Catalogue 61-006).

Annual figures of assets and liabilities given in Table 21.22 are from the department of insurance report. More complete data on the business of licensed lenders are given in the report on small loans companies and money-lenders, published annually by the superintendent of insurance.

Insolvency

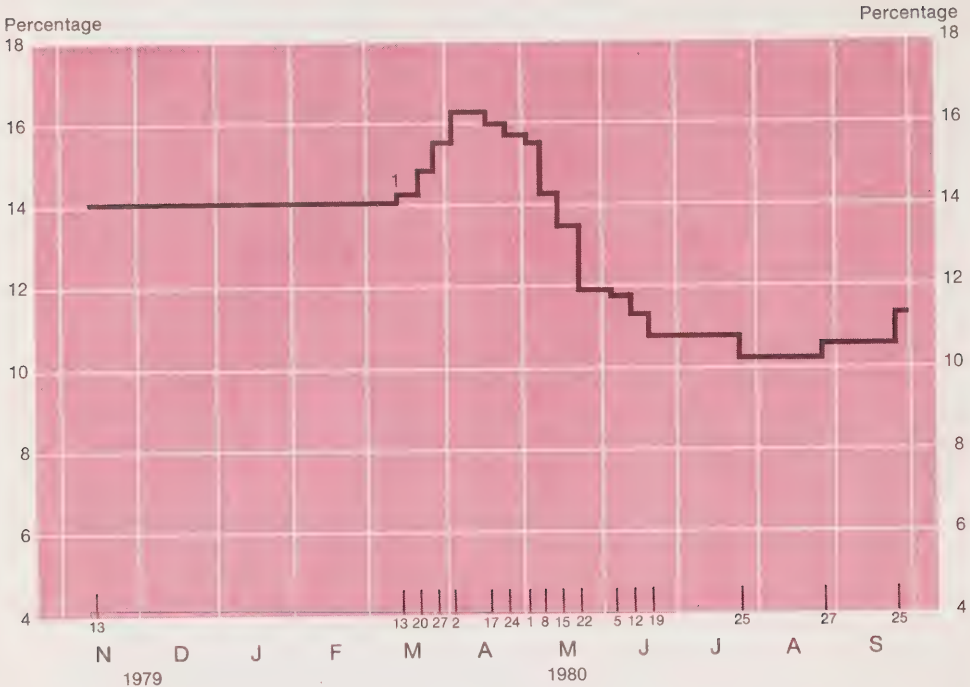
21.3

The term "insolvency" refers to the state or condition of a person (or of a company engaged in business) when he is no longer able to pay his debts as they normally become due for payment.

Bankruptcy may be defined as a legal process which stays all legal actions pertaining to a debtor's debts and which, in general, involves a summary and immediate seizure of all debtor property as assets by a trustee, distribution of these assets among the estate creditors, and discharge of the debtor from future liability for most of the debts which existed at the moment of bankruptcy.

While involving essentially the same administrative principles and processes under the Bankruptcy Act, a distinction is made between a consumer bankruptcy and a commercial bankruptcy because of different conceptual objectives and the impact of provincial legislation respecting the property of an individual which is exempt from seizure in a bankruptcy. A consumer bankruptcy is viewed primarily as a mechanism for providing relief to a financially overburdened debtor from creditor harassment and legal actions such as the seizure of goods and the imposition of wage garnishments. A commercial bankruptcy is more complex and it is primarily a mechanism for the orderly and equitable distribution of assets of an insolvent company to free them for eventual reintegration into the economy.

Bank rate of the Bank of Canada



1. Bank of Canada allows the bank rate to float.

Responsibility for the supervision of the bankruptcy process rests with a superintendent of bankruptcy appointed by the Governor-in-Council who enforces the provisions of the Bankruptcy Act as it applies to trustees in bankruptcy, creditors and bankrupts. The superintendent of bankruptcy is also the director of the bankruptcy branch of the consumer and corporate affairs department. His prime responsibility is to promote confidence in and to protect the integrity of the credit system through the regulation of the bankruptcy process and through the systematic detection and prosecution of fraudulent practices and other abuses.

Operational responsibilities of the superintendent of bankruptcy include licensing and supervision of all trustees in bankruptcy, examining bankrupt estates for possible offences under the Bankruptcy Act or the Criminal Code, maintaining a record of all bankruptcies and of related statistical information and generally supervising a consumer bankruptcy program. The superintendent has representatives in major cities across Canada from whom more detailed information concerning bankruptcy and insolvency may be obtained.

Receiverships constitute the other major consequence of aggravated commercial insolvency and occur when a receiver is appointed to take possession or control under a security agreement or following a court order of substantially all the property or inventory of a debtor.

A receivership is usually precipitated by a secured creditor in an effort to protect his investment in an insolvent company. In the majority of receiverships, as with many commercial bankruptcies, an unsecured creditor's claims are wiped out the moment the secured creditor realizes on his security.

Statistics. Table 21.25 showing consolidation of estates closed provides a comparison by region of realizations, dividends paid and administrative expenses incurred for all estates which were administered and closed for the years 1976 to 1979.

Returns under the Bankruptcy and Winding-up Acts. Statistics Canada data on bankruptcies and insolvencies cover only business failures coming under the federal Bankruptcy Act and the Winding-up Act. Table 21.23 gives yearly comparisons of liabilities — as estimated by debtors — for the main regions of the country. Table 21.24 shows the number of bankruptcies and insolvencies by industry and economic area for 1976-78.

Insurance

21.4

Insurance business is transacted in Canada by about 900 companies and societies. All are licensed or registered by provincial insurance authorities; at the end of 1978, 424 were also registered by the federal insurance department. Details of the classes of insurance each company or society is authorized to transact and statistical information may be found in the published reports of individual superintendents of insurance for the provinces. Financial statistics of the federally registered companies and fraternal benefit societies are published in the annual report of the federal superintendent.

Life insurance

21.4.1

Total life insurance in force in Canada at the end of 1978 amounted to \$338,617 million (\$301,069 in 1977) of which about 93% was written by federally registered companies and fraternal benefit societies. Canadian companies reported an additional \$76,308 million in force out of Canada at the end of 1978 (\$64,555 million at the end of 1977).

At the end of 1978, 153 companies, one less than in 1977, were registered by the federal insurance department to transact life insurance (59 Canadian, 12 British and 82 foreign). There were also 41 registered fraternal benefit societies (16 Canadian and 25 foreign).

Table 21.26 gives figures since 1880 for amounts of new insurance effected and an analysis of amounts in force at the end of the year. Table 21.27 compares newly effected written business and total amounts in force for 1976-78.

Net insurance premiums written in 1978 totalled \$2,591 million compared to \$2,393 million in 1977. Net insurance claims (death, disability and maturity) totalled \$977 million in 1978 compared to \$912 million in 1977. Table 21.28 gives a provincial analysis of the premium income in 1977 and 1978 on a direct written basis only.

The major categories of assets and related liabilities of federally registered life insurance companies are given in Table 21.29. The major sources of income and selected expenditures are given in Table 21.30.

For registered fraternal benefit societies, certificates in force in Canada totalled \$2,608 million at the end of 1978 compared to \$2,387 million at the end of 1977. Premiums written in Canada totalled \$46 million during 1978, of which \$38 million was applicable to Canadian societies and \$8 million to foreign societies. Canadian societies also reported \$120 million in premiums written outside Canada. In 1977, premiums written totalled \$41 million in Canada (\$34 million to Canadian societies and \$7 to foreign societies) and \$111 million outside Canada reported by Canadian societies.

Property and casualty insurance

21.4.2

Direct premiums written in Canada for property and casualty insurance totalled \$7,274 million in 1978, about 75% written by federally registered companies. The rest was written by other provincially licensed companies including a large number of parish, municipal, county and farmer mutuals, and by provincial government insurance offices.

At the end of 1978, there were 357 companies (135 Canadian, 29 British and 193 foreign) registered by the federal insurance department to transact insurance other than life insurance.

For federally registered companies, premium income on a net basis totalled \$5,166 million in 1978. See Table 21.31 (net premiums) and Table 21.32 (direct premiums) for further details.

Property insurance net premiums written in Canada during 1978 were \$1,580 million. Net premiums earned in 1978 were \$1,530 million and net claims were \$818 million, a claims ratio of 54%. Net premiums for automobile insurance written in Canada during 1978 were \$1,757 million. Net premiums earned in 1978 were \$1,818 million and the net claims incurred were \$1,306 million, a claims ratio of 72%.

Personal accident and sickness insurance net premiums written in Canada during 1978 were \$1,265 million. Net premiums earned in 1978 were \$1,247 million and net claims incurred were \$1,017 million, a claims ratio of 82%. Net premiums for liability insurance written in Canada in 1978 were \$313 million. Net premiums earned in 1978 were \$301 million and net claims were \$241 million, a claims ratio of 80%.

The major categories of assets and related liabilities of federally registered property and casualty insurance companies are given in Table 21.33.

Underwriting experience in Canada over the past years has ranged from a loss of \$289.7 million in 1974 to a loss of \$12.3 million in 1978. The loss for 1977 was nearly \$32.2 million (Table 21.34).

21.4.3 Fire losses

Fire losses in Canada reached \$654.9 million in 1978, an increase of \$83.3 million or 14.6% over losses reported in 1977. The total number of fires was 75,292, an increase of 1,249 or 1.68% from 1977. This represents an average daily loss of \$1,794,306 from 206 fires. There were 849 deaths from fire in 1978, an increase of 33 or 4.1% over 1977. Of this total, 171 or 20.3% were children, an increase of 10 or 6.2% over 1977.

21.5 Government insurance

21.5.1 Deposit insurance

The Canada Deposit Insurance Corp. was established in 1967 to provide, for persons having deposits with a member of the corporation, insurance against the loss of deposits up to a maximum of \$20,000 for any one depositor. Membership in the corporation is obligatory for chartered banks, Quebec savings banks and those federally incorporated loan and trust companies that accept deposits from the public. Provincially incorporated loan and trust companies that accept deposits from the public are eligible to apply for membership if they have the consent of the province of incorporation. The definition of deposits, set out in a schedule to the Canada Deposit Insurance Corporation Act, might be summarized as money received by a member institution that is repayable on demand or notice and money that is repayable on a fixed date within five years from the date of deposit or on the anniversary date five years after the date of deposit. Deposits not payable in Canada or in Canadian currency are not insured.

21.5.2 Provincial government insurance

Manitoba. The Manitoba Public Insurance Corp. is a Crown corporation established under the Automobile Insurance Act. The act provides for establishment of a universal, compulsory automobile insurance plan and of other plans of automobile insurance within the province. The corporation started operations November 1, 1971. In mid-1975, the corporation began offering a wide range of non-compulsory general insurance coverages in competition with private insurance companies. Revenue for the plan comes from two sources — premiums on drivers' licences and premiums on vehicles. Premiums are also based on such factors as year, make, model and use of the car, and rating territory, based on the address of the vehicle owner.

Saskatchewan. Saskatchewan government insurance office (SGI), a Crown corporation established by the Saskatchewan Government Insurance Act, 1944, started business in May 1945. It provides all types of insurance other than sickness and life. The aim of the legislation is to provide residents with low-cost insurance designed for their needs. Rates are based on loss experience in Saskatchewan only and the surplus is invested, to the extent possible, within the province. Premium income for 1978 amounted to \$72.4 million and net earnings amounted to \$6.8 million. The total amount made available to

the Saskatchewan government finance office from 1945 to December 31, 1978 exceeded \$12 million. Assets at the latter date were \$180.1 million of which \$93.5 million was invested in bonds and debentures issued by the province and by municipalities, hospitals and schools. Independent insurance agents, numbering 516, sell insurance throughout the province on behalf of the government insurance office.

The Automobile Accident Insurance Act, administered by SGI on behalf of the provincial government, provides a comprehensive automobile accident insurance plan. Premiums paid by motorists create a fund from which benefits are paid in the event of death, injury or damages sustained in automobile accidents. Any surplus over payments is used to increase benefits, reduce premiums or absorb deficits in periods of high accident frequency. The plan provides protection against loss arising out of a motorist's liability to pay for bodily injury or death of others and damage to property of others, up to a limit of \$35,000, regardless of the number of claims arising from any one accident. Comprehensive coverage, including collision and upset, is also provided. From the inception of the act in 1946 to December 31, 1978, more than \$563 million was paid in claims.

In June 1979 the \$17 million, 20-storey C.M. Fines Building in Regina was officially opened as the head office and the corporation acquired a new corporate identity. Formerly known as the Saskatchewan Government Insurance Office (SGIO) it is now called Saskatchewan Government Insurance (SGI).

Alberta. A variety of agencies in Alberta offer forms of prepaid protection corresponding to insurance, but the nature of the enabling legislation governing these plans emphasizes the fact that they do not constitute insurance. Because such exemptions are specifically provided by the insurance laws of the province, reference to these plans is necessary only to make it clear that they do not come within the scope of the Alberta Insurance Act. It should be noted that the Alberta Hail Insurance Act and the Alberta Crop Insurance Act are administered by the Alberta Hail and Crop Insurance Corporation and each contains a clause exempting its operations from the provisions of the Alberta Insurance Act.

Sources

- 21.1 - 21.1.2 Department of Monetary and Financial Analysis, Bank of Canada.
- 21.1.3 Numismatic Products and Public Relations, Royal Canadian Mint.
- 21.1.4 Department of Monetary and Financial Analysis, Bank of Canada; Research Division, The Canadian Bankers' Association; Business Finance Division, Economic Statistics Field, Statistics Canada.
- 21.1.5 Public Affairs, Federal Business Development Bank.
- 21.1.6 The Province of Ontario Savings Office; Treasury Branches of Alberta; The Montreal City and District Savings Bank; Business Finance Division, Economic Statistics Field, Statistics Canada.
- 21.2.1 Business Finance Division, Economic Statistics Field, Statistics Canada.
- 21.2.2 Statement Analysis and Service Section, Department of Insurance.
- 21.3 Bankruptcy Branch, Department of Consumer and Corporate Affairs; Business Finance Division, Economic Statistics Field, Statistics Canada.
- 21.4 - 21.4.2 Statement Analysis and Service Section, Department of Insurance.
- 21.4.3 Dominion Fire Commissioner, Department of Public Works.
- 21.5 Canada Deposit Insurance Corporation; The Manitoba Public Insurance Corporation; Saskatchewan Government Insurance; Department of Consumer and Corporate Affairs, Government of Alberta.

Tables

.. not available
 ... not appropriate or not applicable
 — nil or zero
 -- too small to be expressed

e estimate
 p preliminary
 r revised
 certain tables may not add due to rounding

21.1 Bank rates from Apr. 7, 1967 to Oct. 25, 1979

Date of change	% per annum	Date of change	% per annum	Date of change	% per annum
Apr. 7, 1967	4.50	Feb. 15, 1971	5.75	Dec. 22, 1976	8.50
Sept. 27, 1967	5.00	Feb. 24, 1971	5.25	Feb. 1, 1977	8.00
Nov. 20, 1967	6.00	Oct. 25, 1971	4.75	May 9, 1977	7.50
Jan. 22, 1968	7.00	Apr. 9, 1973	5.25	Mar. 9, 1978	8.00
Mar. 15, 1968	7.50	May 14, 1973	5.75	Apr. 4, 1978	8.50
July 2, 1968	7.00	June 11, 1973	6.25	July 26, 1978	9.00
July 29, 1968	6.50	Aug. 7, 1973	6.75	Sept. 12, 1978	9.50
Sept. 3, 1968	6.00	Sept. 13, 1973	7.25	Oct. 16, 1978	10.25
Dec. 18, 1968	6.50	Apr. 15, 1974	8.25	Nov. 6, 1978	10.75
Mar. 3, 1969	7.00	May 13, 1974	8.75	Jan. 4, 1979	11.25
June 11, 1969	7.50	July 24, 1974	9.25	July 23, 1979	11.75
July 16, 1969	8.00	Nov. 18, 1974	8.75	Sept. 10, 1979	12.25
May 12, 1970	7.50	Jan. 13, 1975	8.25	Oct. 9, 1979	13.00
June 1, 1970	7.00	Sept. 3, 1975	9.00	Oct. 25, 1979	14.00
Sept. 1, 1970	6.50	Mar. 8, 1976	9.50		
Nov. 12, 1970	6.00	Nov. 22, 1976	9.00		

21.2 Assets and liabilities of the Bank of Canada, as at Dec. 31, 1976-78 (million dollars)

Item	1976	1977	1978
Assets			
Foreign exchange	63.1	120.1	214.4
Advances to chartered and savings banks	23.0	40.5	—
Bills bought in open market, excluding treasury bills	104.8	13.7	21.6
Investments			
Treasury bills of Canada	2,085.6	2,418.3	3,489.4
Other securities issued or guaranteed by Canada maturing within three years	2,917.1	3,467.6	3,362.4
Other securities issued or guaranteed by Canada not maturing within three years	3,382.8	4,339.2	5,071.8
Bonds and debentures issued by Industrial Development Bank	858.4	686.9	515.7
Other securities	1,370.6	1,143.7	1,055.6
Industrial Development Bank capital stock	—	—	—
Bank premises	61.4	65.0	75.4
All other assets	976.4	1,121.4	1,299.3
Total, assets	11,843.2	13,416.4	15,105.6
Liabilities			
Capital paid up	5.0	5.0	5.0
Reserve fund	25.0	25.0	25.0
Notes in circulation			
Held by chartered banks	1,240.2	1,370.9	1,465.0
All other	6,572.8	7,267.6	8,074.7
Deposits			
Government of Canada	32.5	26.0	29.2
Chartered banks	3,169.3	3,704.5	4,291.8
Other	123.5	130.9	92.5
Foreign currency liabilities	56.0	99.9	121.7
All other liabilities	618.8	786.5	1,000.7
Total, liabilities	11,843.2	13,416.4	15,105.6

21.3 Assets and liabilities of the Federal Business Development Bank, as at Dec. 31, 1977-79

Item		1977	1978	1979
Assets				
Loans and investments	\$'000,000	1,450.3	1,550.4	1,906.1
Other assets	"	82.8	85.8	72.5
Total, assets	"	1,533.1	1,636.2	1,978.6
Liabilities				
Capital and reserves	\$'000,000	175.8	186.4	190.9
Notes and debentures outstanding	"	1,306.9	1,396.7	1,559.3
Other liabilities	"	50.4	53.1	228.4
Total, liabilities	"	1,533.1	1,636.2	1,978.6
Accounts on books				
Amounts outstanding	\$'000,000	1,480.9 ^r	1,589.6	1,949.1
Customers on books	No.	33,009 ^r	34,123	38,932

21.4 Bank of Canada note liabilities, as at Dec. 31, 1976-78 (thousand dollars)

Denomination	1976	1977	1978
Bank of Canada notes			
\$1	220,112	234,887	245,366
\$2	166,723	179,204	188,520
\$5	353,513	373,944	385,831
\$10	1,142,928	1,196,364	1,254,866
\$20	3,562,128	3,933,577	4,280,950
\$25	46	46	46
\$50	580,126	678,710	800,487
\$100	1,587,884	1,816,263	2,114,160
\$500	25	24	24
\$1,000	186,683	212,648	256,575
Total	7,800,166	8,625,667	9,526,825
Note issues in process of retirement ¹	12,884	12,884	12,883
Total, Bank of Canada note liabilities	7,813,050	8,638,550	9,539,707
Held by:			
Chartered banks	1,240,219	1,370,943	1,465,003
Others	6,572,831	7,267,607	8,074,704

¹Includes, in 1978, chartered banks' notes \$8,130,902, Dominion of Canada notes, \$4,635,506, provincial notes \$27,568 and defunct banks' notes \$88,156; these amounts have changed little in recent years.

21.5 Canadian dollar currency and chartered bank deposits, as at Dec. 31, 1970-78 (million dollars)

Year	Currency outside banks			Chartered bank deposits				Total currency and chartered bank deposits ¹		
	Notes	Coin	Total	Personal savings deposits	Government of Canada deposits	Other deposits ¹	Total ¹	Total including government deposits	Held by general public	
									Including personal savings deposits	Excluding personal savings deposits
1970	3,106	461	3,568	16,615	1,257	10,972	28,845	32,412	31,155	14,540
1971	3,506	488	3,993	17,783	2,239	14,572	34,594	38,587	36,348	18,565
1972	4,056	518	4,574	19,949	2,407	16,892	39,248	43,822	41,415	21,466
1973	4,620	589	5,209	24,604	2,361	19,220	46,186	51,395	49,034	24,429
1974	5,213	656	5,868	29,789	4,682	21,784	56,255	62,124	57,442	27,652
1975	6,079	708	6,787	33,237	3,663	27,359	64,259	71,046	67,383	34,146
1976	6,573	760	7,333	40,478	3,103	31,842 ^r	75,423 ^r	82,756 ^r	79,653 ^r	39,175 ^r
1977	7,268	826	8,094	44,948	4,733	36,579	86,259	94,353	89,620	44,672
1978	8,075	890	8,964	51,528	6,466	42,023	100,017	108,981	102,515	50,987

¹Less total float, (cheques and other items in transit).

21.6 Canadian coin¹ in circulation, as at Dec. 31, 1970-78

Year	Gold \$'000	Silver \$'000	Nickel \$'000	Tombac ^a \$'000	Steel \$'000	Bronze \$'000	Total \$'000	Per capita \$
1970	...	316,610	137,890	549	3,444	46,092	504,583	23.60
1971	...	317,033	159,151	549	3,443	49,297	529,473	24.42
1972	...	317,269	185,141	549	3,442	53,494	559,896	25.65
1973	...	325,981	243,246	549	3,441	58,259	631,476	28.58
1974	...	386,350	321,434	549	3,440	65,199	776,972	34.41
1975	...	444,548	382,334	549	3,440	71,490	902,361	39.58
1976	...	508,680	423,710	549	3,440	77,926	1,014,304	...
1977	14,319	509,303	470,262	548	3,439	83,183	1,081,054	...
1978	20,000	509,021	541,548	548	3,439	91,619	1,166,175	...

¹The figures shown are of net issues of coin.

^aTombac, a copper-zinc alloy, was used to conserve nickel for war purposes; no coins of this metal have been issued since 1944.

21.7 Receipts of gold bullion at the Royal Canadian Mint and bullion and coinage issued, 1970-78

Year	Gold received '000 oz t	Gold bullion issued '000 oz t	Gold coin issued \$'000	Silver coin issued \$'000	Nickel coin issued \$'000	Bronze coin issued \$'000
1970	2,114	2,150	...	—	20,702	3,089
1971	2,010	2,009	...	556	21,277	3,207
1972	1,931	1,895	...	350	26,006	4,199
1973	1,476	1,483	...	8,804	58,128	4,768
1974	1,280	1,337	...	60,382	78,208	6,941
1975	1,079	1,056	...	58,203	60,939	6,295
1976	1,633	1,665	...	57,398	41,404	6,437
1977	1,783	1,452	14,319	826	46,600	5,261
1978	1,559	1,219	20,000	745	71,340	8,439

21.8 Statement of chartered bank assets and liabilities, as at Dec. 31, 1976-78 (thousand dollars)

Assets and liabilities	1976	1977	1978
Assets			
Gold coin and bullion	134,568	191,879	334,303
Other coin in Canada	65,681	53,299	69,633
Other coin outside Canada	1,853	2,609	2,431
Notes of and deposits with Bank of Canada	4,409,565	5,075,492	5,756,795
Government and bank notes other than Canadian	95,209	102,962	120,867
Deposits with banks in Canadian currency	615,478	695,737	682,350
Deposits with banks in currencies other than Canadian	19,330,256	21,774,243	28,616,834
Cheques and other items in transit (net)	1,355,499	2,423,949	3,438,464
Government of Canada treasury bills, at amortized value	4,141,269	4,857,922	5,394,967
Other Government of Canada issued or guaranteed securities maturing within three years, at amortized value	2,187,375	2,087,718	1,910,300
Government of Canada issued or guaranteed securities maturing after three years, at amortized value	2,259,325	2,564,231	2,468,618
Canadian provincial government issued or guaranteed securities, at amortized value	613,172	448,345	431,260
Canadian municipal and school corporation issued or guaranteed securities not exceeding market value	441,375	436,035	408,740
Other Canadian securities, not exceeding market value	2,958,093	5,510,683	12,285,821
Securities other than Canadian, not exceeding market value	524,676	802,251	989,317
Mortgages and hypothecs insured under the National Housing Act 1954	5,217,544	7,059,045	9,005,359
Day, call and short loans to investment dealers and brokers in Canadian currency, secured	1,571,359	1,801,034	1,861,771
Day, call and short loans to investment dealers and brokers in currencies other than Canadian, secured	453,740	882,853	1,100,525
Loans to Canadian provincial governments in Canadian currency	77,471	246,631	352,745
Loans to Canadian municipalities and school corporations in Canadian currency less provision for losses	1,924,387	1,546,476	1,475,327
Other loans in Canadian currency, less provision for losses	54,716,692	61,649,030	70,598,511
Other loans in currencies other than Canadian, less provision for losses	16,507,810	21,828,278	30,025,376
Bank premises at cost, less amounts written off	1,031,970	1,210,372	1,436,713
Securities of and loans to corporations controlled by the bank	540,527	1,045,802	1,463,148
Customers' liability under acceptances, guarantees and letters of credit, as per contra	5,075,809	6,019,107	8,543,790
Other assets	152,456	161,310	325,996
Total, assets	126,403,159	150,477,293	189,099,961
Liabilities			
Deposits by Government of Canada in Canadian currency	3,102,646	4,732,727	6,465,762
Deposits by Canadian provincial governments in Canadian currency	1,051,916	1,234,384	1,079,819
Deposits by banks in Canadian currency	1,108,851	1,231,253	1,290,887
Deposits by banks in currencies other than Canadian	20,750,774	27,353,264	37,826,932
Personal savings deposits payable after notice, in Canada, in Canadian currency	40,478,243	44,947,576	51,528,172
Other deposits payable after notice, in Canadian currency	17,657,561	20,910,637	25,939,351
Other deposits payable on demand, in Canadian currency	13,373,317	15,613,166	16,839,812
Other deposits in currencies other than Canadian	17,464,865	21,164,297	30,607,033
Advances from Bank of Canada, secured	23,000	40,500	—
Acceptances, guarantees and letters of credit	5,075,809	6,019,107	8,543,790
Other liabilities	713,273	812,396	1,264,838
Accumulated appropriations for losses	1,090,082	1,265,722	1,446,131
Debentures issued and outstanding	1,168,946	1,307,689	1,524,940
Capital paid up	410,925	416,405	450,458
Rest account	2,926,031	3,419,269	4,283,493
Undivided profits at latest financial year end	6,920	8,901	8,543
Total, liabilities	126,403,159	150,477,293	189,099,961

21.9 Canadian cash reserves, 1970-79 (million dollars)

Year	Cash reserves			Canadian dollar deposit liabilities	Average cash reserve ratio
	Bank of Canada deposits	Bank of Canada notes	Total		
1970	1,112	587	1,699	27,066	6.3
1971	1,356	610	1,966	31,329	6.3
1972	1,615	686	2,301	36,951	6.2
1973	1,902	768	2,670	42,246	6.3
1974	2,106	888	2,993	49,814	6.0
1975	2,653	985	3,638	60,225	6.0
1976	2,991	1,071	4,063	69,642	5.8
1977	3,411	1,161	4,571	80,496	5.6
1978	3,997	1,250	5,247	91,299	5.7
1979	4,564	1,361	5,925	107,162	5.5

Bank of Canada deposits are averages of the months in the year shown; the monthly levels are averages of the juridical days in that month. Bank of Canada notes and Canadian dollar deposits are also averages of the months in the year shown; the monthly levels in this case are averages of the four consecutive Wednesdays ending with the second last Wednesday in the previous month. Until June 1967 the required cash reserve ratio was 8% on both demand and notice deposits. For the next eight months the required minimum monthly average on demand deposits was increased by one-half of 1% per month and that on notice deposits was decreased by one-half of 1%. Since February 1968 the required ratios have been 12% for demand deposits and 4% for notice deposits as prescribed under the Bank Act.

21.10 Classification of chartered bank deposit liabilities payable to the public in Canada in Canadian currency, as at Apr. 30, 1978 and 1979 (number of accounts)

Deposit accounts of the public of:	1978			1979		
	Personal savings deposit accounts	Other deposit accounts of the public	Total deposit accounts of the public	Personal savings deposit accounts	Other deposit accounts of the public	Total deposit accounts of the public
Less than \$100	8,985,695	2,849,471	11,835,166	9,158,606	2,881,353	12,039,959
\$100 or over but less than \$1,000	7,063,431	3,311,584	10,375,015	7,153,689	3,403,239	10,556,928
\$1,000 or over but less than \$10,000	6,868,251	1,645,248	8,513,499	7,409,641	1,808,850	9,218,491
\$10,000 or over but less than \$100,000	1,077,007	330,282	1,407,289	1,317,012	373,577	1,690,589
\$100,000 or over	14,013	52,854	66,867	19,749	62,304	82,053
Total deposits	24,008,397	8,189,439	32,197,836	25,058,697	8,529,323	33,588,020

21.11 Classification of chartered bank loans in Canadian currency, as at Dec. 31, 1976-78 (million dollars)

Class of loan	1976	1977	1978
General loans			
Personal	17,049.1	19,691.3	22,620.4
To individuals, fully secured by marketable bonds and stocks	834.9	924.1	971.3
Home improvement loans	37.4	36.0	27.8
To individuals, not elsewhere classified	16,176.7	18,731.1	21,621.3
Farmers			
Farm Improvement Loans Act	456.4	415.9	468.2
Other farm loans	2,883.0	3,472.3	4,424.5
Industry	9,791.4	10,239.6	10,812.4
Chemical and rubber products	530.0	645.2	536.6
Electrical apparatus and supplies	445.4	411.8	430.7
Foods, beverages and tobacco	1,151.8	1,157.8	1,301.7
Forest products	1,192.1	1,103.5	989.5
Furniture	189.0	217.0	241.1
Iron and steel products	1,549.2	1,528.3	1,672.8
Mining and mine products	975.9	910.3	1,226.2
Petroleum and products	1,782.1	2,003.4	1,832.2
Textiles, leather and clothing	644.0	678.5	721.7
Transportation equipment	450.6	517.3	589.8
Other products	881.3	1,066.7	1,270.0
Merchandisers	4,694.1	5,236.3	5,821.6
Construction contractors	2,065.5	2,411.7	2,776.5
Public utilities, transportation and communications	1,625.9	1,547.2	1,673.4
Other business	10,041.1	11,888.4	13,356.6
Religious, educational, health and welfare institutions	607.6	526.1	516.4
Total, general loans	49,214.2	55,428.8	62,470.0
Other loans			
Provincial governments	77.5	246.6	352.7
Municipal governments and school districts	1,924.4	1,546.5	1,475.3
Special	902.8	967.7	1,153.2
Other	492.2	502.6	371.4
Loans to finance the purchase of Canada Savings Bonds	524.5	547.3	689.2
Grain dealers and exporters	748.3	598.8	918.4
Installment and other financial companies	428.0	484.0	410.5
Total, other loans	5,097.7	4,893.5	5,370.9
Total, loans in Canadian currency	54,311.9	60,322.2	67,840.9

21.12 Chartered bank revenues, expenses, shareholders' equity and accumulated appropriations for losses, as at Oct. 31, 1977-79 (million dollars)

Item	1977	1978	1979
For financial year ended Oct. 31			
Revenues			
Income from loans	9,683.2	12,162.9	18,263.2
Income from securities ¹	1,042.0	1,334.4	1,992.6
Other operating income	843.6	969.3	1,193.9
Total, revenues	11,568.8	14,466.6	21,449.7
Expenses			
Interest on deposits and bank debentures	6,923.5	9,078.3	15,577.8
Salaries, premiums, contributions and other staff benefits	1,946.0	2,196.9	2,551.4
Property expenses, including depreciation	539.1	619.0	696.0
Other operating expenses ²	914.6	1,077.0	1,292.1
Total, expenses ³	10,323.2	12,971.2	20,117.3

⁵Share of post-acquisition earnings of subsidiaries not previously consolidated.

¹Figures include sub-agencies and sub-branches in Canada receiving deposits for the banks employing them.

Bank	Province or territory											
	Nfld.		PEI		NS		NB		Que.		Ont.	
	1978	1979	1978	1979	1978	1979	1978	1979	1978	1979	1978	1979
Bank of Montreal	37	39	5	5	34	34	26	28	218	223	489	492
The Bank of Nova Scotia	58	59	10	10	67	68	54	54	82	95	407	407
The Toronto-Dominion Bank	4	6	2	2	10	11	8	9	102	98	543	546
La Banque Provinciale du Canada	—	—	—	—	—	—	27	—	297	—	41	—
Canadian Imperial Bank of Commerce	18	18	9	9	38	38	27	26	216	214	772	763
The Royal Bank of Canada	20	20	6	6	84	84	31	31	230	228	586	587
Banque Canadienne Nationale	—	—	—	—	—	—	—	—	461	—	26	—
The Mercantile Bank of Canada	—	—	—	—	1	1	1	1	2	2	5	5
Bank of British Columbia	—	—	—	—	—	—	—	—	—	—	—	—
Canadian Commercial & Industrial Bank	—	—	—	—	1	1	—	—	—	—	1	1
Northland Bank	—	—	—	—	—	—	—	—	—	—	—	—
Continental Bank of Canada	—	—	—	—	—	1	—	—	—	2	—	5
Banque Nationale du Canada ^a	—	1	—	2	—	7	—	29	—	755	—	67
Total	137	143	34	34	235	245	174	178	1,619	1,617	2,869	2,875

21.14 Branches¹ of individual Canadian chartered banks, by province, as at Dec. 31, 1978 and 1979 (concluded)

Bank	Province or territory											
	Man.		Sask.		Alta.		BC		YT and NWT		Canada	
	1978	1979	1978	1979	1978	1979	1978	1979	1978	1979	1978	1979
Bank of Montreal	69	71	63	66	124	132	170	167	5	5	1,240	1,262
The Bank of Nova Scotia	34	35	44	47	101	105	106	110	2	2	975	994
The Toronto-Dominion Bank	54	55	48	49	111	116	115	114	3	3	1,000	1,009
La Banque Provinciale du Canada	1	—	—	—	1	—	3	—	—	—	372	—
Canadian Imperial Bank of Commerce	87	89	109	110	199	199	241	229	20	15	1,736	1,710
The Royal Bank of Canada	101	103	102	102	146	148	209	209	6	6	1,521	1,524
Banque Canadienne Nationale	6	—	—	—	—	—	1	—	—	—	494	—
The Mercantile Bank of Canada	1	1	1	1	2	2	1	1	—	—	14	14
Bank of British Columbia	—	—	—	—	10	10	33	35	—	—	43	45
Canadian Commercial & Industrial Bank	—	—	—	1	2	2	1	1	—	—	5	6
Northland Bank	1	1	1	2	2	2	1	1	—	—	5	6
Continental Bank of Canada	—	—	—	—	—	1	—	1	—	—	—	10
Banque Nationale du Canada ^a	—	8	—	—	—	3	—	3	—	—	—	875
Total	354	363	368	378	698	720	881	871	36	31	7,405	7,455

¹Figures include sub-agencies and sub-branches in Canada for receiving deposits.

²La Banque Provinciale du Canada amalgamated with Banque Canadienne Nationale in November 1979 forming the Banque Nationale du Canada.

21.15 Credit unions in Canada, 1972-77

Year	Credit unions chartered	Members	Assets \$'000	Loans granted to members \$'000
1972	4,351	5,843,820	6,761,224	2,970,397
1973	4,256	6,382,054	8,465,786	3,765,767
1974	4,194	6,805,625	10,026,257	4,111,857
1975	4,117	7,268,552	12,331,379	4,983,118 ^r
1976	4,037	7,742,312	15,077,462	6,487,807 ^r
1977	3,926	8,318,489	18,929,159	8,734,926

21.16 Summary statistics of local credit unions, by province, 1977

Province or territory	Credit unions chartered	Members	Assets \$'000	Shares \$'000	Deposits \$'000	Loans granted to members \$'000
Newfoundland	33	10,481	17,408	7,955	15,458	15,304
Prince Edward Island	13	21,165	22,919	7,474	17,213	14,102
Nova Scotia	124	150,910	169,769	74,607	159,054	103,846
New Brunswick	136	183,998	228,593	119,571	210,270	133,721
Quebec	1,559	4,379,250	8,424,236	849,062	7,918,119	3,277,192
Ontario	1,278	1,605,342	3,422,840	1,181,884	3,273,303	1,734,826
Manitoba	177	332,433	955,643	1,657	895,721	380,620
Saskatchewan	242	483,518	1,764,251	392,332	1,621,961	767,101
Alberta	187	367,474	1,051,648	141,605	953,144	701,005
British Columbia	173	780,756	2,868,890	219,018	2,661,858	1,607,093
Northwest Territories	4	3,162	2,962	119	2,766	116
Total	3,926	8,318,489	18,929,159	2,995,284	17,728,867	8,734,926

21.17 Assets, liabilities and members' equity of local credit unions in Canada, 1976-78 (million dollars)

Item	1976	1977	1978	Item	1976	1977	1978
Assets				Assets (continued)			
Cash and demand deposits				Loans			
On hand	207	266	333	Cash loans			
In banks	51	65	61	Personal	3,768	4,512	5,490
In centrals	1,363	1,627	1,882	Farm	270	303	403
Other	46	74	63	Co-operatives and other enterprises	171	206	243
Investments				Other	107	150	136
Term deposits	1,305	1,610	1,908	Mortgage loans			
Government of Canada	26	41	69	Dwellings	5,400	7,763	9,832
Provincial governments	204	202	215	Farm	247	295	352
Municipal governments	396	426	395	Co-operatives and other enterprises	558	814	1,091
Shares in centrals	142	188	230	Other	103	130	174
Other	252	384	406	Allowance for doubtful loans	-58	-75	-91

21.17 Assets, liabilities and members' equity of local credit unions in Canada, 1976-78 (million dollars) (concluded)

Item	1976	1977	1978	Item	1976	1977	1978
Assets (concluded)				Liabilities (concluded)			
Fixed assets				Loans payable			
Land and buildings	228	293	338	Centrals	284	338	512
Equipment and furniture	64	74	88	Banks	6	17	19
Stabilization fund deposits	36	47	63	Other	33	46	56
Other assets	191	223	295	Deposits			
Total, assets	15,077	19,618	23,976	Demand	6,526	8,216	9,342
Liabilities				Term	4,925	6,919	9,305
Accounts payable				Other liabilities	97	83	121
Interest	146	201	265	Members' equity			
Dividends	23	1	3	Share capital	2,589	3,097	3,563
Other	49	53	58	Reserves	337	363	433
				Undivided surplus	62	284	299
				Total, liabilities and members' equity	15,077	19,618	23,976

21.18 Revenues and expenses of trust and mortgage companies, 1977-79 (million dollars)

Item	Trust companies			Mortgage companies		
	1977	1978	1979	1977	1978	1979
Revenues						
Interest earned	2,021	2,393	3,024	824	948	1,067
Dividends	37	62	94	20	28	45
Fees and commissions	413	486	539	2	3	2
Other revenues	47	45	55	30	45	49
Total, revenues	2,518	2,986	3,712	876	1,024	1,163
Expenses						
Interest	1,659	1,983	2,666	648	770	927
Depreciation	16	18	23	2	2	2
Amortization	1	2	2	2	2	2
Income taxes	68	73	27	43	36	15
Other expenses	650	764	868	113	137	139
Total, expenses	2,394	2,840	3,586	808	947	1,085
Net profit	124	146	126	68	77	78

21.19 Cheques cashed at 50 clearing centres, by province or region, 1978 and 1979 (million dollars)

Clearing centre	1978	1979	Clearing centre	1978	1979
ATLANTIC PROVINCES	68,280	83,342	London	27,574	31,472
Charlottetown	2,568	2,715	Niagara Falls	2,605	3,038
Fredericton	7,025	7,922	Oshawa	18,414	21,011
Glace Bay	223	248	Ottawa	50,836	58,811
Halifax	24,791	35,390	Peterborough	3,396	3,526
Moncton	3,827	4,265	St. Catharines	7,130	9,481
Saint John	8,219	10,411	Sarnia	6,760	8,273
St. John's	18,844	19,491	Sault Ste Marie	6,215	4,692
Sydney	2,783	2,900	Sudbury	3,802	4,017
QUEBEC	705,206	752,411	Thunder Bay	6,193	6,983
Chicoutimi	3,375	3,742	Timmins	1,557	1,685
Drummondville	1,492	1,674	Toronto	1,506,365	2,136,747
Grimby	2,074	2,300	Windsor	18,056	21,243
Montreal	583,444	619,092	PRAIRIE PROVINCES	399,545	495,200
Quebec	102,852	111,263	Brandon	1,726	2,044
Saint-Hyacinthe	3,227	4,065	Calgary	137,338	182,632
Shawinigan Falls	737	857	Edmonton	105,252	133,393
Sherbrooke	4,162	4,920	Lethbridge	3,690	4,534
Trois-Rivières	2,861	3,308	Medicine Hat	1,831	3,077
Valleyfield	982	1,190	Moose Jaw	1,302	1,628
ONTARIO	1,731,967	2,400,376	Prince Albert	1,562	1,784
Brantford	5,090	4,946	Regina	28,652	32,494
Chatham	7,292	11,087	Saskatoon	9,402	11,190
Cornwall	2,130	2,326	Winnipeg	108,790	122,424
Guelph	3,751	4,628	BRITISH COLUMBIA	233,387	286,901
Hamilton	40,077	50,395	Vancouver ¹	190,906	228,709
Kingston	3,994	3,721	Victoria	42,481	58,192
Kitchener	10,730	12,294	Total	3,138,385	4,018,230

¹Includes New Westminster.

21.20 Assets, liabilities and shareholders' equity of trust companies 1977-79 (million dollars)

Item	1977	1978	1979	Item	1977	1978	1979
Assets				Assets			
Cash and demand deposits				With investment dealers	166	42	66
Chartered banks				Other collateral loans	192	208	276
Canadian currency	218	314	307	Other loans	23	15	33
Foreign currency	6	2	1	Lease contracts	184	190	208
Branches of Canadian banks outside Canada	1	8	2	Accounts receivable and accruals	319	408	494
Other institutions in Canada and outside Canada	63	47	48	Refundable taxes	4	6	2
Term deposits				Fixed assets, held for own use or for income	163	175	197
Swapped deposits	314	344 ^r	103	Real estate held for sale	42	46	84
Chartered banks				Unamortized debt discount and expense	--	--	1
Canadian currency	934	933	968	Other assets	45	47	92
Foreign currency	217	329 ^r	394	Total, assets	23,203	27,906	33,373
Other institutions	35	47	70	Liabilities			
Short-term bills and notes				Demand deposits			
Canada treasury bills	90	129 ^r	43	Chequing	831	944	922
Provincial treasury bills and notes	7	11 ^r	9	Non-chequing	3,524	3,877	4,996
Municipal notes	—	—	—	Term deposits with original term of			
Sales finance companies' notes	82	79	91	Less than one year	1,790	2,587	3,742
Commercial paper	437	385	697	One to five years			
Long-term bonds, debentures and notes				For RRSP purposes	1,765	2,512	3,199
Canada	531	645	916	For RHOSP purposes	169	221	126
Provincial	390	392	377	Other	12,743	14,830	16,311
Municipal	133	154	201	Over five years	199	301	766
Corporation	440	507	814	Bank loans			
Investment in units of real estate investment trusts	2	--	2	Chartered banks	42	107	58
Corporation shares	616	1,067	1,381	Banks outside Canada	1	--	1
Investment in subsidiaries				Accounts payable	562	780	1,011
Shares	221	201	109	Income tax payable	18	2	1
Advances	39	66	41	Owing to parent and affiliated Canadian companies	42	47	285
Other investments in Canada	1	--	12	Subordinated notes	33	35	36
Investments outside Canada				Deferred income			
Term deposits, bills and notes	2	1	2	Unamortized discount	7	9	13
Long-term bonds, debentures and notes	2	4	6	Other	5	9	5
Corporation shares	10	13	16	Mortgages payable	139	134	129
Investment in and advances to subsidiaries	1	1	3	Deferred income taxes	169	199	221
Loans				Other liabilities	20	36	60
Mortgages				Shareholders' equity			
National Housing Act	2,533	3,272	3,975	Share capital			
Conventional				Preferred	137	173	234
Residential	12,706	14,529	17,074	Common	265	350	400
Non-residential	1,699	2,677	3,334	Contributed surplus	232	162	167
Personal				Mortgage and investment reserves	30	39	66
Secured	335	318 ^r	513	Reserve fund	75	71	66
Unsecured		292 ^r	411	Retained earnings	407	484	556
Collateral business loans				Total, liabilities and shareholders' equity	23,203	27,906	33,373

21.21 Assets, liabilities and shareholders' equity of mortgage companies, 1977-79 (million dollars)

Item	1977	1978	1979	Item	1977	1978	1979
Assets				Assets (continued)			
Cash and demand deposits				Long-term bonds, debentures and notes			
Chartered banks				Canada	86	129	143
Canadian currency	36	37	34	Provincial	43	36	23
Foreign currency	—	--	--	Municipal	1	2	2
Other institutions in Canada and outside Canada	1	2	--	Corporation	65	100	199
Investments in Canada				Investments in units of real estate investment trust	—	--	—
Term deposits				Corporation shares	161	315	485
Chartered banks				Investment in subsidiaries			
Canadian currency	218	244	165	Shares	251	386	464
Foreign currency				Advances	174	126	161
(including swapped deposits)	59	10	19	Other investments in Canada	--	1	3
Other institutions	2	21	21	Investments outside Canada			
Short-term bills and notes				Term deposits, bills and notes	1	1	—
Canada treasury bills	1	18	—	Long-term bonds, debentures and notes	5	11	8
Provincial treasury bills and notes	3	6	6	Corporation shares	3	12	23
Municipal notes	--	—	—	Investment in and advances to subsidiaries	5	5	2
Sales finance companies' notes	5	1	--	Loans			
Commercial paper	35	51	63	Mortgages			
				National Housing Act	763	867	1,168

21.21 Assets, liabilities and shareholders' equity of mortgage companies, 1977-79 (million dollars) (concluded)

Item	1977	1978	1979	Item	1977	1978	1979
Assets (concluded)				Liabilities (concluded)			
Conventional				Canadian currency	77	61	234
Residential	5,879	6,398	7,589	Foreign currency	1	--	37
Non-residential	1,065	1,031	1,219	Banks outside Canada	5	3	--
Personal				Other notes and loans payable			
Secured	--	4	9	Promissory notes			
Unsecured	33	35	48	Less than one year	328	407	478
Collateral business loans				One year or more	347	396 ^r	934
Loans with investment dealers	20	5	2	Other	22	26	6
Other	98	149	173	Accounts payable and accruals	231	291	313
Other loans	1	--	4	Income taxes	14	7	--
Lease contracts	66	64	60	Owing to parent and affiliated companies			
Accounts receivable and accruals	105	121	133	In Canada	530	548	528
Refundable taxes	--	1	4	Outside Canada	--	--	--
Fixed assets	35	36	36	Debentures issued under trust indenture	999	1,139	1,347
Real estate held for sale	26	33	28	Deferred income	13	19	31
Unamortized debt discount and expense	11	9	9	Mortgages payable	11	7	19
Other assets	18	17	25	Deferred income taxes	67	74	82
Total, assets	9,274	10,285	12,330	Other liabilities	29	35	37
Liabilities				Shareholders' equity			
Demand deposits				Share capital			
Chequing	112	100	98	Preferred	121	251	298
Non-chequing	361	375	400	Common	178	167	186
Term deposits with original term of				Contributed surplus	112	113	114
Less than one year	101	118	158	Mortgage and investment reserves	37	40	37
One to five years	4,635	5,120	5,933	General reserve	59	68	74
Over five years	673	707	764	Retained earnings	209	213	229
Bank loans				Total, liabilities and shareholders' equity	9,274	10,285	12,330
Chartered banks							

21.22 Assets and liabilities of small loans companies and money-lenders, 1976-78 (thousand dollars)

Assets and liabilities	1976	1977	1978
Assets			
Small loans balances	234,917	207,856	184,164
Balances, large loans and conditional sales agreements	1,117,640	1,055,982	1,073,686
Cash	8,973	8,276	12,651
Other	220,277	289,913	346,570
Total, assets	1,581,807	1,562,027	1,617,071
Liabilities			
Borrowed money	918,846	932,825	966,226
Unearned charges on large loans and conditional sales agreements	248,100	223,543	208,409
Reserves for losses	52,513	49,255	50,813
Paid-up capital	118,425	108,322	142,967
Surplus paid in by shareholders	42,991	43,736	42,543
Earned surplus	161,736	167,681	172,044
Other	39,196	36,665	34,069
Total, liabilities	1,581,807	1,562,027	1,617,071

21.23 Estimated liabilities¹ of bankruptcies and insolvencies, 1974-78 (thousand dollars)

Year	Atlantic provinces	Quebec	Ontario	Prairie provinces	British Columbia	Total
1974	3,748	148,865	126,720	21,897	24,390	325,620
1975	2,496	167,524	102,076	21,037	32,163	325,295
1976 ^r	840,835	159,018	153,940	33,798	33,304	1,220,895
1977	16,010	358,842	197,734	38,911	52,060	663,557
1978	12,239	252,678	236,809	57,703	68,940	628,369

¹Estimated by debtors and therefore to be accepted with reservations.

21.24 Bankruptcies and insolvencies, by industry and economic area, 1976, 1977 and 1978

Year and industry	Atlantic provinces	Quebec	Ontario	Prairie provinces	British Columbia	Total	Esti- mated liabilities \$'000
1976							
Primary industries	—	22	25	9	10	66	10,606
Manufacturing	5	116	105	14	13	253	926,370
Foods and beverages	1	8	5	1	1	16	1,410
Textiles	—	4	6	—	—	10	2,574
Clothing	—	22	8	1	—	31	7,094
Wood	1	20	22	4	4	51	30,015
Paper and allied industries	1	22	24	1	—	48	10,008
Primary and fabricated metal, machinery, transportation equipment, electrical products and non-metallic mineral products	—	22	31	5	5	63	36,887
Chemical	—	1	1	1	—	3	719
Other manufacturing industries	2	17	8	1	3	31	837,663
Construction	14	145	250	45	52	506	75,831
General contractors	9	53	74	14	21	171	50,149
Special trade contractors	5	92	176	31	31	335	25,682
Transportation, communication and other utilities	1	49	101	24	16	191	11,545
Trade	12	418	527	68	77	1,102	118,067
Food	2	61	47	5	8	123	12,755
General merchandise	—	9	22	2	1	34	1,456
Automotive products	2	75	98	16	23	214	16,296
Apparel and shoes	3	71	74	8	7	163	11,705
Hardware	1	9	12	2	3	27	2,082
Household furniture and appliances	2	42	69	8	7	128	18,024
Drugs	—	6	7	—	—	13	624
Other trades	2	145	198	27	28	400	55,125
Finance, insurance and real estate	1	9	29	4	8	51	18,356
Service	9	184	271	22	32	518	60,123
Education, health and welfare	2	9	16	1	3	31	4,708
Recreational	—	15	23	3	4	45	6,927
Business	2	23	55	2	4	86	14,519
Personal	—	18	28	2	3	51	2,910
Other services	5	119	149	14	18	305	31,059
Total, all industries	42	943	1,308	186	208	2,687	1,220,898
1977							
Primary industries	2	17	42	22	12	95	13,723
Manufacturing	5	161	129	25	29	349	198,585
Foods and beverages	1	9	9	4	1	24	22,459
Textiles	1	6	7	1	—	15	3,873
Clothing	1	22	7	—	1	31	6,144
Wood	—	20	22	2	6	50	16,111
Paper and allied industries	1	15	16	4	3	39	5,226
Primary and fabricated metal, machinery, transportation equipment, electrical products and non-metallic mineral products	—	49	44	6	12	111	119,278
Chemical	—	7	4	2	1	14	3,380
Other manufacturing industries	1	33	20	6	5	65	22,114
Construction	8	204	393	78	94	777	139,556
General contractors	4	68	119	36	30	257	85,702
Special trade contractors	4	136	274	42	64	520	53,854
Transportation, communication and other utilities	1	55	109	25	12	202	12,722
Trade	26	619	648	125	113	1,531	202,132
Food	6	89	79	13	10	197	16,032
General merchandise	3	16	29	2	3	53	7,887
Automotive products	3	118	135	32	20	308	21,864
Apparel and shoes	3	92	107	8	8	218	18,034
Hardware	1	2	14	4	2	23	1,635
Household furniture and appliances	5	65	62	18	18	168	31,102
Drugs	—	4	6	3	1	14	12,492
Other trades	5	233	216	45	51	550	93,086
Finance, insurance and real estate	—	24	28	3	12	67	17,103
Service	12	282	319	44	67	724	79,724
Education, health and welfare	1	30	29	5	4	69	7,927
Recreational	—	12	29	5	7	53	7,492
Business	2	66	72	8	20	168	25,217
Personal	4	21	38	3	6	72	5,485
Other services	5	153	151	23	30	362	33,603
Total, all industries	54	1,362	1,668	322	339	3,745	663,555
1978							
Primary industries	1	16	57	13	22	109	27,608
Manufacturing	3	170	176	29	32	410	87,646
Foods and beverages	—	8	5	3	2	18	2,872
Textiles	—	4	5	3	—	12	1,025
Clothing	—	27	8	—	1	36	7,501
Wood	3	34	27	7	11	82	12,738
Paper and allied industries	—	35	42	4	1	82	18,769

21.24 Bankruptcies and insolvencies, by industry and economic area, 1976, 1977 and 1978 (concluded)

Year and industry	Atlantic provinces	Quebec	Ontario	Prairie provinces	British Columbia	Total	Estimated liabilities \$'000
1978 (concluded)							
Primary and fabricated metal, machinery, transportation equipment, electrical products and non-metallic mineral products	—	41	58	9	12	120	35,731
Chemical	—	4	7	1	2	14	1,808
Other manufacturing industries	—	17	24	2	3	46	7,202
Construction	16	302	506	131	173	1,128	158,855
General contractors	7	92	148	57	53	357	83,962
Special trade contractors	9	210	358	74	120	771	74,893
Transportation, communication and other utilities	1	49	150	39	49	288	18,173
Trade	28	722	692	142	173	1,757	185,612
Food	4	93	86	17	36	236	17,280
General merchandise	4	18	39	2	2	65	24,665
Automotive products	2	165	156	32	25	380	22,781
Apparel and shoes	4	138	92	17	21	272	21,326
Hardware	1	11	12	3	2	29	1,626
Household furniture and appliances	—	64	82	19	19	184	14,416
Drugs	1	9	3	—	3	16	1,823
Other trades	12	224	222	52	65	575	81,695
Finance, insurance and real estate	2	36	56	12	43	149	41,208
Service	19	437	409	71	105	1,041	109,268
Education, health and welfare	—	47	26	4	4	81	13,399
Recreational	—	15	21	5	8	49	4,124
Business	5	57	90	24	34	210	22,596
Personal	7	37	45	9	16	114	10,090
Other services	7	281	227	29	43	587	59,059
Total, all industries	70	1,732	2,046	437	597	4,882	628,370

21.25 Summary statistics¹ of estates closed during 1976-79, under the Bankruptcy Act

Year and item		Atlantic provinces	Quebec	Ontario	Prairie provinces	British Columbia	Total
1976 ¹							
Bankrupt estates							
Estates closed	No.	20	2,262	3,574	797	816	7,469
Assets as declared by debtors	\$'000	678	57,509	29,651	3,628	7,852	99,318
Liabilities as declared by debtors	..	3,417	226,919	119,738	15,302	38,081	403,457
Realization by trustees	..	325	12,020	17,267	2,803	6,044	38,459
Costs of administration	..	162	6,250	8,216	1,229	1,917	17,774
Costs as percentage of realization	%	49	52	47	44	32	45
Paid to creditors	\$'000	163	6,770	9,051	1,574	4,127	21,685
Average percentage received by creditors	%	5	3	8	10	11	5
Proposals							
Proposals closed	No.	1	78	24	—	14	117
Liabilities as declared by debtors	\$'000	42	23,327	14,109	—	5,888	43,366
Paid to creditors	..	11	3,169	2,579	—	1,855	7,614
1977							
Bankrupt estates							
Estates closed	No.	644	2,782	6,174	1,314	1,425	12,339
Assets as declared by debtors	\$'000	14,398	82,008	130,685	26,335	35,369	288,794
Liabilities as declared by debtors	..	45,800	173,672	269,544	70,307	75,837	635,161
Realization by trustees	..	746	16,879	18,036	5,427	1,960	43,049
Costs of administration	..	349	8,271	9,463	2,562	863	21,539
Costs as percentage of realization	%	47	49	52	47	44	50
Paid to creditors	\$'000	397	8,608	8,573	2,815	1,097	21,539
Average percentage received by creditors	%	1	5	3	4	1	3
Proposals							
Proposals closed	No.	4	74	36	10	22	146
Liabilities as declared by debtors	\$'000	1,944	24,708	16,598	1,880	8,830	53,960
Paid to creditors	..	173	3,523	1,434	747	189	6,066
1978							
Bankrupt estates							
Estates closed	No.	653	3,475	7,567	1,587	1,357	14,639
Assets as declared by debtors	\$'000	15,248	91,314	142,980	30,475	33,262	313,279
Liabilities as declared by debtors	..	46,754	185,211	280,700	91,851	69,228	673,744
Realization by trustees	..	411	19,234	13,239	6,560	3,127	42,541
Costs of administration	..	298	8,558	6,398	3,065	1,642	19,961
Costs as percentage of realization	%	72	44	48	47	51	47
Paid to creditors	\$'000	113	10,676	6,841	3,495	1,485	22,610
Average percentage received by creditors	%	1	6	2	4	2	3
Proposals							
Proposals closed	No.	2	78	30	7	13	130
Liabilities as declared by debtors	\$'000	110	14,027	7,285	6,150	1,942	29,515
Paid to creditors	..	14	3,919	1,128	284	355	5,700

21.25 Summary statistics of estates closed during 1976-79, under the Bankruptcy Act (concluded)

Year and item		Atlantic provinces	Quebec	Ontario	Prairie provinces	British Columbia	Total
1979							
Bankrupt estates							
Estates closed	No.	1,040	4,769	7,369	1,863	1,270	16,311
Assets as declared by debtors	\$ '000	5,047	39,397	63,584	16,531	26,286	150,845
Liabilities as declared by debtors	"	21,705	156,038	215,288	56,185	66,239	515,454
Realization by trustees	"	1,924	19,619	16,262	7,271	6,022	51,098
Costs of administration	"	1,449	11,728	8,085	3,592	2,918	27,773
Costs as percentage of realization	%	75	60	50	49	48	54
Paid to creditors	\$ '000	475	7,892	8,177	3,678	3,103	23,325
Average percentage received by creditors	%	2	5	4	7	5	5
Proposals							
Proposals closed	No.	2	81	39	7	14	143
Liabilities as declared by debtors	\$ '000	1,635	40,288	1,936	355	1,125	45,339
Paid to creditors	"	74	13,777	1,514	283	701	16,348

¹Excludes Small Debtor Program.**21.26 Life insurance effected and in force in Canada by insurance companies under federal registration, 1880-1978 (million dollars)**

Year	New insurance effected during year	Amounts in force Dec. 31			Total
		Canadian	British	Foreign	
1880	14	38	20	34	91
1900	68	267	39	124	431
1920	630	1,664	77	916	2,657
1940	590	4,609	146	2,221	6,975
1960	5,693	30,418	1,555	12,676	44,649
1970	12,915	76,775	5,727	28,615	111,116
1974	25,488	128,178	8,785	40,157	177,120
1975	32,526	151,974	10,476	45,629	208,079
1976	36,016	179,083	11,962	51,645	242,690
1977	41,864	210,962	13,546	53,631	278,139
1978	45,037	239,800	15,024	58,609	313,433

21.27 Amounts of ordinary¹ and group life insurance policies effected and in force in Canada by federally registered companies, 1976-78 (million dollars)

Policies	Canadian			British			Foreign		
	1976	1977	1978	1976	1977	1978	1976	1977	1978
Effected during year									
Ordinary ¹	12,783	14,579	16,002	1,748	1,863	2,158	4,983	5,215	5,671
Group	12,830	16,539	16,339	333	299	445	3,338	3,369	4,421
In force Dec. 31									
Ordinary ¹	69,917	78,950	88,323	8,548	9,723	10,814	24,629	27,062	29,674
Group	109,166	132,011	151,477	3,414	3,823	4,210	27,016	26,569	28,935

¹Includes industrial policies.**21.28 Life insurance premiums (direct written), by province, 1977 and 1978 (million dollars)**

Year, province or territory	Ordinary ¹	Group	Total
1977			
Newfoundland	18	10	28
Prince Edward Island	5	3	8
Nova Scotia	52	21	73
New Brunswick	37	14	51
Quebec	475	210	685
Ontario	662	285	947
Manitoba	66	27	93
Saskatchewan	53	23	76
Alberta	129	52	181
British Columbia	151	70	221
Yukon and Northwest Territories	2	1	3
Miscellaneous	18	3	21
Total	1,668	719	2,387

21.28 Life insurance premiums (direct written), by province, 1977 and 1978 (million dollars) (concluded)

Year, province or territory	Ordinary ^a	Group	Total
1978			
Newfoundland	21	10	31
Prince Edward Island	6	2	8
Nova Scotia	57	21	78
New Brunswick	41	15	56
Quebec	515	218	733
Ontario	723	306	1,029
Manitoba	72	33	105
Saskatchewan	57	26	83
Alberta	150	60	210
British Columbia	166	76	242
Yukon and Northwest Territories	3	1	4
Miscellaneous	19	3	22
Total	1,830	771	2,601

^aIncludes industrial policies.

21.29 Major assets and liabilities of federally registered life insurance companies, as at Dec. 31, 1976-78 (million dollars)

Assets and liabilities	Canadian ¹			British ²			Foreign ²		
	1976	1977	1978	1976	1977	1978	1976	1977	1978
Assets									
Bonds	8,259	9,380	10,827	708	945	995	1,464	1,716	1,899
Stocks	1,991	2,048	2,392	286	232	255	8	15	57
Mortgages ³	8,758	9,796	10,819	584	685	784	1,644	1,753	1,762
Real estate	1,393	1,494	1,771	127	136	114	77	76	74
Policy loans	1,709	1,811	1,957	86	93	100	194	201	211
Other assets	1,017	1,126	1,445	136	92	141	161	153	199
Segregated	2,781	3,350	4,062	407	525	693	66	76	103
Total	25,908	29,005	33,273	2,334 ⁴	2,708	3,082	3,614 ⁴	3,990	4,305
Liabilities									
Actuarial reserves	18,122	20,120	21,304	1,675	1,876	1,992	2,775	2,926	3,130
Outstanding claims	272	289	320	12	14	14	57	54	57
Amounts on deposit	1,461	1,601	1,798	6	10	10	168	189	214
Other liabilities	1,893	2,142	3,306 ⁵	56	70	99	175	299	367
Segregated	2,765	3,334	4,045	408	522	690	58	61	80
Total	24,513	27,486	30,773	2,157	2,492	2,805	3,233	3,529	3,848
Surplus or excess ⁶	1,352	1,472	2,455	177	216	277	381	461	457
Capital stock	43	47	45	...	—	—	...	—	—

¹Assets at book values, in and out of Canada (segregated funds at market values).

²Assets at book values in Canada only.

³Mortgages include agreements of sale.

⁴Includes assets under control of Chief Agent in Canada.

⁵Includes \$1,730 million appropriated surplus (reserve requested by department, \$492 million and \$1,238 million other reserve) previously included in liabilities.

⁶Excess of assets over liabilities in Canada for British and foreign companies; for such companies, "capital stock" is not applicable in Canada.

21.30 Major items of income and expenditure of federally registered life insurance companies, 1977 and 1978 (million dollars)

Year, income and expenditure	Canadian ¹	British ²	Foreign ²
1977			
Income			
Insurance premiums and annuity considerations	4,414	395	574
Investment income — regular funds	1,859	185	293
Net investment gain — segregated funds	278	39	2
Other items	131	16	43
Total income	6,682	635	912
Selected expenditure			
Claims incurred	2,012	162	307
Dividends to policyholders	413	39	92
Commissions and general expenses	973	87	159
Taxes, licences and fees	166	9	55

21.30 Major items of income and expenditure of federally registered life insurance companies, 1977 and 1978 (million dollars) (concluded)

Year, income and expenditure	Canadian ¹	British ²	Foreign ²
1978			
Income			
Insurance premiums and annuity considerations	5,151	433	633
Investment income — regular funds	2,198	210	320
Net investment gain — segregated funds	467	88	9
Other items	148	14	47
Total income	7,964	745	1,009
Selected expenditure			
Claims incurred	2,388	181	309
Dividends to policyholders	458	51	102
Commissions and general expenses	1,094	89	171
Taxes, licences and fees	61	17	52

¹Worldwide business of which \$1,162 million in 1977 and \$1,492 million in 1978 was applicable to out-of-Canada business.

²Business in Canada only.

21.31 Property and casualty net premiums written and net claims incurred, by class of insurance and by incorporation of company, 1977 and 1978 (million dollars)

Year and insurance class	Net premiums written				Net claims incurred
	Canadian	British	Foreign	Total	
1977					
Property ¹	851	203	496	1,550	727
Automobile	1,336	138	489	1,963	1,317
Liability	192	29	86	307	250
Accident and sickness	789	29	299	1,117	929
Other casualty ²	103	23	66	192	86
Marine	13	5	19	37	26
Total	3,284	427	1,455	5,166	3,335
1978					
Property ¹	932	199	449	1,580	818
Automobile	1,268	101	388	1,757	1,306
Liability	205	29	79	313	241
Accident and sickness	905	30	330	1,265	1,017
Other casualty ²	131	23	62	216	96
Marine	15	5	15	35	30
Total	3,456	387	1,323	5,166	3,508

¹Includes fire, personal property, real property, windstorm, earthquake, inland transportation, livestock, theft, forgery, plate glass.

²Includes hail, fidelity, surety, boiler and machinery, aircraft, credit, title, mortgage.

21.32 Property and casualty direct premiums written and claims incurred, by province and by category of company, 1977 and 1978 (million dollars)

Year, province or territory	Premiums written			Claims incurred
	Companies federally registered ¹	Companies provincially licensed	Total	
1977				
Newfoundland	78	16	94	51
Prince Edward Island	23	2	25	14
Nova Scotia	181	8	181	96
New Brunswick	168	7	175	111
Quebec	1,538	467	2,005	1,260
Ontario	2,171	407	2,578	1,726
Manitoba	123	128	251	151
Saskatchewan	72	78	150	77
Alberta	575	76	651	366
British Columbia	412	387	799	558
Yukon and Northwest Territories	21	1	22	9
Canada	5,362	1,569	6,931	4,419

21.32 Property and casualty direct premiums written and claims incurred, by province and by category of company, 1977 and 1978 (million dollars) (concluded)

Year, province or territory	Premiums written		Total	Claims incurred
	Companies federally registered ¹	Companies provincially licensed		
1978				
Newfoundland	79	18	97	68
Prince Edward Island	24	2	26	12
Nova Scotia	184	3	184	107
New Brunswick	172	7	179	121
Quebec	1,378	685	2,063	1,448
Ontario	2,312	354	2,666	1,848
Manitoba	131	131	262	188
Saskatchewan	80	93	173	87
Alberta	646	88	734	439
British Columbia	449	420	869	646
Yukon and Northwest Territories	20	1	21	11
Canada	5,475	1,799	7,274	4,975

¹Includes Lloyd's, now federally registered.²Less than \$500,000.**21.33 Major assets and liabilities of federally registered property and casualty insurance companies, 1977 and 1978 (million dollars)**

Assets and liabilities	Canadian ¹		British ²		Foreign ³	
	1977	1978	1977	1978	1977	1978
Assets						
Bonds	2,589	3,012	447	449	2,231	2,391
Stocks	846	971	54	63	76	76
Amounts due from agents and premiums receivable	440	509	40	20	146	147
Other	1,813	2,216	130	170	452	541
Total	5,688	6,708	671 ³	702 ³	2,905 ³	3,155 ³
Liabilities						
Unearned premiums	1,324	1,399	169	144	658	564
Unpaid claims	2,280	2,774	295	305	978	1,032
Other	772	938	46	48 ⁴	363	329 ⁴
Total	4,376	5,111	510	497	1,999	1,925
Statutory reserves (including general and contingency reserves)	176	242	17	25	56	251
Surplus or excess ⁵	780	894	144	180 ⁶	850	979 ⁶
Capital stock and amounts transferred	356	461	—	—	—	—

¹Business in and out of Canada, investments on book value basis.²Business in Canada only, investments on book value basis.³Assets for British and Foreign at book value.⁴Beginning in 1978, British and foreign property and casualty companies statements are balanced; marine liabilities (\$19 million, British and \$21 million, foreign) are included in "Other" liabilities.⁵Excess of assets over liabilities in Canada for British and foreign companies; for such companies, "capital stock" is not applicable in Canada.⁶This amount is the Head Office Account in 1978.**21.34 Property and casualty insurance, underwriting results in Canada, 1977 and 1978 with totals for 1973-78 (million dollars)**

Year and registered companies	Underwriting revenue	Claims ¹ incurred	Expenses incurred	Dividends to policyholders	Underwriting income
1977					
Canadian ²					
Property and casualty	2,350.7	1,495.9	816.9	34.5	+3.4
A and S branches ³	730.4	635.8	108.4	43.1	-56.9
British	426.2	274.7	137.3	7.0	+7.2
Foreign					
Property and casualty	1,110.8	703.6	352.6	22.3	+32.3
A and S branches ³	260.8	208.8	64.3	5.9	-18.2

21.34 Property and casualty insurance, underwriting results in Canada, 1977 and 1978 with totals for 1973-78 (million dollars) (concluded)

Year and registered companies	Underwriting revenue	Claims ¹ incurred	Expenses incurred	Dividends to policyholders	Underwriting income
1978					
Canadian ²					
Property and casualty	2,530.4	1,668.7	865.5	17.4	-21.2
A and S branches ³	833.5	727.4	111.3	58.2	-63.4
British	398.5	237.1	137.5	—	+23.9
Foreign					
Property and casualty	1,041.2	650.2	338.7	12.7	+39.6
A and S branches ³	298.8	207.0	66.6	16.4	+8.8
Total, 1978	5,102.4	3,490.4	1,519.6	104.7	-12.3
1977	4,878.9	3,318.8	1,479.5	112.8	-32.2
1976	4,090.4	2,825.7	1,273.0	73.5	-81.3
1975	3,302.0	2,385.5	1,029.4	47.4	-160.3
1974	2,743.2	2,118.5	874.2	40.2	-289.7
1973	2,460.1	1,804.2	772.8	31.8	-148.7

¹Includes adjustment expenses.²Excludes transactions out of Canada.³Accident and sickness branches of life insurance companies.

21.35 Fire losses¹, by type of property and cause of fire, 1977 and 1978

Type of property and reported cause of fire	1977		1978	
	Fires reported	Property loss \$ '000	Fires reported	Property loss \$ '000
Type of property				
Residential	36,513	220,005	37,133	249,152
Mercantile	2,525	59,493	2,645	70,264
Farm	2,085	26,885	1,646	28,783
Manufacturing	1,821	69,150	2,062	87,010
Institutional and assembly	3,018	72,843	3,067	84,908
Miscellaneous	28,081	123,289	28,739	134,805
Total	74,043	571,665	75,292	654,922
Reported cause				
Smokers' carelessness (including matches)	12,680	53,007	10,807	51,639
Stoves, furnaces, boilers and smoke pipes	6,234	41,766	5,877	47,852
Electrical wiring and appliances	15,532	114,474	15,834	119,691
Defective and overheated chimneys and flues	482	2,545	640	2,903
Hot ashes, coals and open fires	1,621	12,238	4,975	53,497
Petroleum and its products	2,800	18,239	3,760	27,389
Lights, other than electric	205	552	225	1,308
Lightning	893	6,129	530	4,735
Sparks on roofs	28	90	309	2,087
Exposure fires	2,300	22,184	1,693	19,617
Spontaneous ignition	700	5,444	737	10,986
Incendiarism	8,957	99,383	9,100	113,347
Miscellaneous known causes (explosions, fireworks, friction, hot grease or metal, steam or hot water pipes)	6,923	43,888	11,316	50,598
Unknown	14,688	151,727	9,489	149,273

¹Excludes forest fires.

21.36 Fire losses¹, by province, 1975-78

Province or territory	Property loss		1977			1978		
	1975 \$ '000	1976 \$ '000	Fires reported	Property loss \$ '000	Loss per capita \$	Fires reported	Property loss \$ '000	Loss per capita \$
Newfoundland	15,835	7,658	711	9,958	17.59	732	12,552	21.93
Prince Edward Island	2,356	3,436	584	2,895	23.90	596	2,145	17.54
Nova Scotia	14,196	13,162	1,944	11,839	14.13	2,274	15,307	18.11
New Brunswick	19,620	15,443	1,142	24,055	34.83	1,411	16,427	23.49
Quebec	130,175	158,042	17,873	173,854	27.70	19,388	226,386	35.99
Ontario	131,552	143,102	24,610	156,677	18.67	25,190	182,201	21.49
Manitoba	22,177	28,578	6,754	23,992	23.31	5,672	26,019	25.26
Saskatchewan	21,729	13,392	3,092	18,475	19.62	2,650	18,126	19.03
Alberta	32,864	40,792	9,544	69,020	35.99	9,629	66,484	33.48
British Columbia	69,392	77,567	7,523	78,746	31.42	7,441	81,596	31.93
Yukon	1,563	648	95	813	38.01	148	1,310	60.11
Northwest Territories	2,354	2,073	171	1,341	30.68	161	6,366	147.71
Canada	463,813	503,893	74,043	571,665	24.57	75,292	654,922	27.89

¹Excludes forest fires.

Sources

21.1 - 21.2, 21.4 - 21.5, 21.8 - 21.12 Bank of Canada.

21.3 Federal Business Development Bank.

21.6 - 21.7 Royal Canadian Mint.

21.13 - 21.14 The Canadian Bankers' Association.

21.15 - 21.21, 21.23 - 21.24 Business Finance Division, Economic Statistics Field, Statistics Canada.

21.22, 21.26 - 21.34 Special Services Division, Department of Insurance.

21.25 Superintendent of Bankruptcy, Department of Consumer and Corporate Affairs.

21.35 - 21.36 Dominion Fire Commissioner, Department of Public Works.

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Consolidated finance statistics

22.1

Data on each level of government constitute the basis of the intergovernment consolidation which is presented for the years 1971-72 and 1975-77 in Table 22.1. The consolidation process integrates the separate levels of government to reveal the fiscal framework of the public sector viewed as an economic unit. As a result, the numerous intergovernmental transactions either as revenue or as expenditure are eliminated in order to obtain a measure of the collective impact of all government transactions upon the rest of the economy, in terms of services provided and taxes collected.

Federal government finance

22.2

General accounts

22.2.1

Tables 22.2 - 22.5 and 22.20 present financial statistics of the federal government prepared in accordance with the concepts published in *The Canadian system of government financial management statistics* (Statistics Canada Catalogue 68-506). Financial statistics in Tables 22.7, 22.8 and 22.11 are extracted directly from the *Public accounts of Canada*.

Tables 22.2 and 22.3 give details of gross general revenue and expenditure for the years ended March 31, 1976 to 1978. Revenue increased from \$34,703 million to \$39,054 million while expenditures rose from \$36,845 million to \$45,955 million.

Transfers from the federal government to provincial governments, territories and local governments for the years ended March 31, 1977 and 1978 are shown in Table 22.20. Comparable figures for the previous year are available in the *Canada Year Book 1978-79* pp 826-828.

Table 22.4 provides details of the assets and liabilities of the federal government as at March 31, 1976 to 1978. Table 22.5 analyzes gross bonded debt according to average interest rate, average term of issue and place of payment as at March 31, 1976 to 1978.

In addition to direct gross bonded debt, the federal government has assumed certain contingent liabilities. The major categories of this indirect or contingent debt are the guarantee of insured loans under the National Housing Act and the guaranteed bonds and debentures of Canadian National Railways. The remainder consists chiefly of guarantees of loans made by chartered banks to the Canadian Wheat Board, to farmers and to university students and of guarantees under the Export Development Act. Table 22.6 provides details of the contingent liabilities of the government as at March 31, 1977 and 1978.

Table 22.7 summarizes the public debt position during the period 1973-78 as to interest and amount outstanding. Details of unmatured debt and treasury bills outstanding and information on new security issues of the federal government may be found in the *Public accounts of Canada*. They are summarized by standard classification in *Federal government finance* (Statistics Canada Catalogue 68-211).

Individual and corporation taxes

22.2.2

Statistics of income tax collections are gathered at the time the payments are made and are therefore up to date. Over 74% of individual taxpayers are wage- or salary-earners who have almost the whole of their tax liability deducted at the source by their employers. All other taxpayers are required to pay most of their estimated tax during the taxation year. Thus, the greater part of the tax is collected during the same year in which the related income is earned and only a limited residue remains to be collected when returns are filed. The collections for a given fiscal year include employer remittances of tax deductions, Canada Pension Plan contributions, unemployment insurance premiums and instalments, embracing portions of two or more taxation years, and year-end payments; they cannot therefore be closely related to the statistics for a given

taxation year. As little information about a taxpayer is received when the payment is made and as a single cheque from one employer may frequently cover the tax payment of hundreds of employees, the payments cannot be statistically related to taxpayers by occupation or income. Descriptive classifications of taxpayers are available only from tax returns, but collection statistics, if interpreted with the current tax structure and the above factors in mind, indicate the trend of income in advance of final compilation of statistics. The statistics given in Table 22.8 pertain to revenue collections for fiscal years ended March 31, 1974-78.

Individual income tax statistics collected by the national revenue department are presented in Tables 22.17, 22.18 and 22.19 on a calendar-year basis and are compiled from a sample of all returns received. Taxpayers and amounts of income and tax are shown for selected cities and by occupational class and income classes.

Statistics on the taxation of corporate income showing a reconciliation of income taxes to taxable income and book profits are published on an industry basis in *Corporation taxation statistics* (Statistics Canada Catalogue 61-208). Data for 1976, 1977 and preliminary data for 1978 are summarized for nine industrial divisions in Table 22.9. Taxable income data are also available on a provincial basis, as shown in Table 22.10 for years 1973 to 1977 and 1978 preliminary.

22.2.3 Excise taxes

Excise taxes collected by the customs and excise branch are given for the years ended March 31, 1976 to 1978 in Table 22.11.

Gross excise duties collected for the year ended March 31, 1978 were: spirits \$371 million; beer or malt liquor \$184 million; tobacco, cigarettes and cigars \$327 million, for a total of \$882 million. A drawback of 99% of the duty may be granted when domestic spirits, testing not less than 50% over proof, are delivered in limited quantities for medicinal or research purposes to universities, scientific or research laboratories, public hospitals or health institutions in receipt of federal and provincial government aid.

22.3 Federal-provincial fiscal relations

Fiscal relations between the federal, provincial and territorial governments are governed either by an act of Parliament or by formal agreements. The British North America Act, 1867, the Public Utilities Income Tax Transfer Act, and the Federal-Provincial Fiscal Arrangements and Established Programs Financing Act, 1977 are the most important legislative measures under which fiscal transfers are paid by the federal government to the provinces. Payments under each of these acts are described below.

22.3.1 British North America Act

Under this act, which forms the written constitution of the country, the federal government pays to the provinces statutory subsidies consisting of contributions toward the support of provincial governments. These include an allowance per head of population, allowances for interest on debt and other special amounts which were agreed upon under the arrangements subsequent to the enactment of the constitution in 1867. Total federal payments under this act amounted to \$34.1 million in the fiscal year ended on March 31, 1978.

22.3.2 Public Utilities Income Tax Transfer Act

Pursuant to the Public Utilities Income Tax Transfer Act, the federal government turns over to the provinces 95% of the tax it collects from privately-owned public utilities on income which is attributable to the generation or distribution to the public of electrical energy, gas and steam. Payments amounted to \$46.1 million in the fiscal year ended March 31, 1978.

22.3.3 Federal-provincial fiscal arrangements

Federal-provincial fiscal arrangements originated at the end of World War II. The first agreements were implemented for the years 1947 to 1952, pursuant to the Dominion-Provincial Tax Rental Agreement Act. The 1947 agreements started the series of five-

year federal-provincial arrangements, each one modifying and broadening the terms and content of the preceding one. For instance, with the adoption in 1957 of the tax sharing arrangements, replacing the tax rental agreements in force since 1947, the federal government initiated an income tax abatement system in favour of the provinces. The 1957 formula, however, was modified by the 1962 agreements so that the provinces could establish their own income tax rates which could be higher or lower than the federal abatement. Further, the federal government offered to collect, together with its own income tax, any income tax that provinces levied.

In 1967 the equalization program was established pursuant to the enactment of the Federal-Provincial Fiscal Arrangements Act, 1967. New acts were passed in 1972 and 1977. These revisions did not modify the basic philosophy of redistributing part of the nation's wealth among the provinces. From its general revenue, the federal government compensates any province whose per capita revenue is below the national average because of a relative deficiency in the province's tax base. Thus, equalization payments are intended to ensure that all citizens are provided with comparable standards of public services throughout the country. The Federal-Provincial Fiscal Arrangements and Established Programs Financing Act, 1977 added provisions concerning the financing of established shared-cost programs, set out later in this section.

Fiscal equalization payments. According to the formula, known as the representative tax system, provincial revenue subject to equalization is divided into 29 revenue sources in the 1977 act, compared with 20 in the 1972 act, to reflect more accurately what provinces are taxing. For each revenue source, an economic revenue base is established uniformly for all provinces. To determine the amount of equalization to which a province is entitled, population of the province as a proportion of the population of all provinces and revenue base of the province as a proportion of that of all provinces are calculated for each of the 29 revenue sources. Where the former proportion is higher than the latter for any of the revenue sources, the province is said to have a fiscal capacity deficiency for that revenue source; if these proportions are reversed, the province is said to have a fiscal capacity excess. The total revenue of all provinces for each revenue source is multiplied by each province's respective fiscal capacity related to the appropriate revenue source and for any province the amount of equalization payable is the sum total of the deficiency products less the total of the excess products.

Since the beginning of this program in 1967, seven provinces have received equalization payments: Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick, Quebec, Manitoba and Saskatchewan. Payments amounted to \$2,383.5 million in the fiscal year ended March 31, 1978.

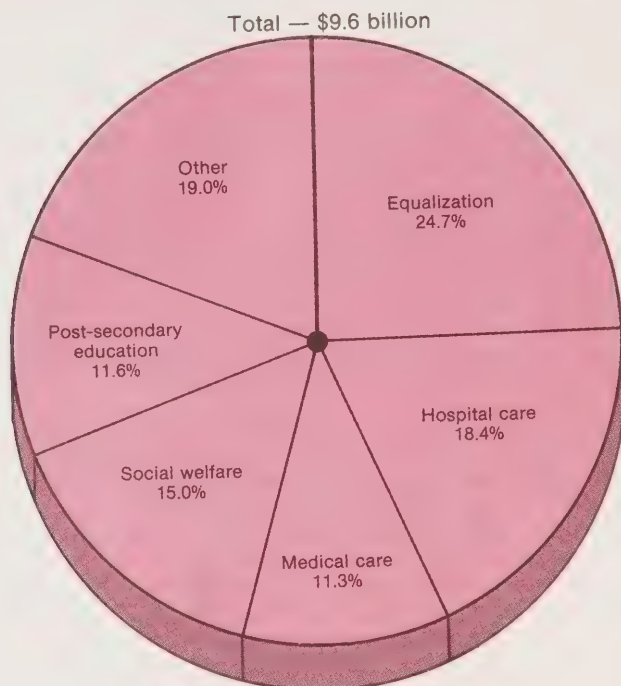
Tax collection agreements. Pursuant to the Federal-Provincial Fiscal Arrangements Act, 1962, the federal government undertook to collect for the provinces, with its own income tax, provincial personal and corporation income taxes provided that provincial tax systems were uniform with the federal system. All provinces except Quebec signed the agreements for personal income tax, and all provinces except Quebec and Ontario for corporation income tax. This collection is made at no cost to the provinces except for a small fee for administration of special tax rebates implemented by some provinces.

The federal tax abatement system, introduced in 1957, was abandoned in 1972 and the federal rates of personal income tax were adjusted downward to take into account the previous abatements and modifications to the structure of the federal tax system. A new scale was established according to which it was estimated that a provincial tax rate of 30.5% of the new basic federal tax would produce the same revenue as did the 28% abatement granted under the 1967 arrangements.

Due to modifications brought by the 1977 act for financing established shared-cost programs, the enlarged personal income tax field available to the provinces would be equivalent to about 44% of basic federal tax. Provincial governments, however, are free to specify rates above or below 44% and so determine the impact of their income taxes. Section 22.6.2 gives provincial rates in 1978.

Provincial personal income tax revenue guarantee payments. The formula according to which the federal government guaranteed that the provinces would not

Federal government transfers to provincial governments and territories, 1978



suffer a loss of personal and corporation income tax revenue entailed by the 1971 revision of the Income Tax Act was completely modified by the 1977 act.

First, provincial revenue from corporation income tax was no longer subject to revenue guarantee payments. Second, the guarantee of provincial revenue from personal income tax was to be calculated for a given year in the five-year period April 1, 1977 to March 31, 1982, in relation to the immediately preceding year. For provinces which express their rates of personal income tax as a percentage of basic federal tax, the federal government would compensate any revenue losses they might incur as a result of policy changes which reduced the federal basic tax. However, such losses would have to exceed 1.0% of federal basic tax within a province before a guarantee payment could be made to that province. For a province with its own personal income tax system — in Quebec only — a guarantee payment would be made if changes were made in the tax system similar to the federal changes during the same year.

Established programs financing. The 1977 act sets out provisions for financing established shared-cost programs, namely those for post-secondary education, hospital insurance, medical care and extended health care services. Through this new act all open-ended cost-sharing arrangements in the health care fields were terminated and cost-sharing provisions of the Hospital Insurance and Diagnostic Services Act and the Medical Care Act were replaced by new financing provisions.

The federal contributions under the new financing system take the form of a share of the field of income taxes, occupied so far by the federal government, and of cash payments. In the field of income taxes, the share of federal taxes transferred to the provinces is equal to 13.5% of basic federal tax and a 1.0% tax on corporation taxable income. These percentages include the former transfers of 4.357% of personal income

tax and the 1.0% tax on corporation taxable income which were associated with the post-secondary education cost-sharing program. Therefore, the net additional tax transfer in favour of the provinces corresponds to 9.143% of the former basic federal tax. From 1977 onward, the latter was reduced to take into account such a transfer. As a result, there would be no increase in income tax to be paid by taxpayers if the provinces were to raise their rates to offset precisely the federal reduction.

In the case of Quebec, the tax change required consists only in a reduction of the special federal tax abatement granted to the residents of the province, from 24% to 16.5%, in order to express it in relation to the reduced basic federal tax with no loss to Quebec taxpayers. This special abatement is tantamount to the province's contracting out all the above-named shared-cost programs in 1964.

Cash payments are in four forms, as follows: (1) A basic per capita cash contribution equal to the amount obtained from the multiplication of the population of each province by an amount equivalent to 50% of the national average per capita contribution to the above-mentioned shared-cost programs in the base year, 1975-76, adjusted annually according to the rate of growth of the Canadian economy. (2) Transition payments to compensate for variations in the value of the tax transfers among the provinces to ensure that this value is at least equal to basic cash contributions. (3) Levelling adjustments to facilitate the transition to the new arrangements and to achieve equal per capita payments among provinces over a five-year period. Provinces below the national average will receive additional grants so as to reach this average in three years; provinces above the national average will be reduced to that average in five years. (4) A cash payment of \$20 per capita, adjusted annually to take account of variations in the gross national product, in respect of some health care services formerly included in part in the Canada Assistance Plan, such as nursing home and adult residential care services. Other services are also included, namely intermediate care, converted mental hospitals, home care and ambulatory health care.

Alternative payments for standing programs. In 1964, the provinces were given an option to assume full financial and administrative responsibility for certain federal-provincial shared-cost programs in return for fiscal compensation. To this end, the Established Programs (Interim Arrangements) Act was enacted in April 1965; it was repealed through the 1977 act. Quebec alone took advantage of this legislation and contracted out all major shared-cost programs. Several amendments were made to the act between 1965 and 1972. As a result, the tax abatement granted to Quebec taxpayers, in respect of contracting out, was at the end of 1976 as follows: hospital insurance program 16%; special welfare program 5%; and youth allowances program 3%. However, the latter abatement has been fully recovered from Quebec since 1973 when federal youth allowances started to be paid to Quebec residents.

The new arrangements for federal income tax abatement in favour of the provinces required new calculations of the special abatement to Quebec related to contracting out. These calculations take into account the additional fiscal transfer of 13.5% granted to all provinces and the accompanying reduction in the basic federal tax. As a result, the revised tax abatement granted to Quebec taxpayers is 16.5% of the reduced federal basic tax commencing with the 1977 taxation year. This 16.5% abatement corresponds, in dollar value, to the former 24% abatement.

Provincial taxes and fees. According to the British North America Act, a government cannot levy taxes on another government. However, due to the growing complexities of the economic and commercial transactions of governments, the constitutional provisions for intergovernmental taxation have become increasingly difficult to observe, particularly when government purchases are made through suppliers in the private sector such as retailers and building contractors.

To remove, or at least minimize, the uncertainties and difficulties surrounding the paying of consumption taxes among governments, a set of indexes based on criteria applied to various types of expenditure has been devised and is incorporated in the 1977 federal-provincial fiscal arrangements. Under this act the federal government could enter into reciprocal taxation agreements with the provincial governments as of October

1977. Such agreements would run until March 31, 1981, with provisions for renewal. The terms of these agreements also apply to purchases by Crown corporations listed in parts of the Financial Administration Act and the Federal-Provincial Fiscal Arrangements and Established Programs Financing Act, 1977. As of February 1977, six provinces had agreed to enter into these reciprocal taxation agreements: Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick, Quebec and Ontario.

22.4 Provincial government finance

Because of variation from province to province in administrative structure and, to a lesser extent, in accounting and reporting practices, adjustments are made to financial data reported in public accounts to produce statistics comparable between different provinces and with those for the other levels of government. In 1972 the concepts and classifications of the national system of government financial statistics were redefined (see *The Canadian system of government financial management statistics*, Statistics Canada Catalogue 68-506). Financial statistics for the years 1971 onward are compiled in accordance with these revisions.

Gross general revenue and expenditure are given in Table 22.22, liabilities in Table 22.12, and liabilities of other governments and entities guaranteed by provincial and territorial governments in Table 22.13. More information on outstanding provincial bonds and debentures is in Table 22.14.

22.5 Local government finance

Local government taxation. In 1976, the latest year for which complete data are available, local government revenues from taxation rose 19.6% to \$6,567 million. Taxes receivable expressed as a percentage of taxation revenue were 8.99%. Lower percentages of taxes receivable relative to taxation revenue were recorded in all provinces with the exception of Newfoundland and British Columbia. Rates of collection increased slightly in 1976 compared with 1975 in all provinces and the territories with the exception of Newfoundland and Saskatchewan.

Local government revenue, expenditure and debt. General revenue of local government in 1976 increased 15.8% to \$17,055 million over 1975, while general expenditure at \$18,508 million also showed an increase of 15.8%. Debenture and other long-term debt amounted to \$15,502 million as at December 31, 1976 compared with \$13,521 million at December 31, 1975. Details for revenue and expenditure are given in Tables 22.23 and 22.24. Preliminary data are given for 1977 and estimates for 1978.

22.6 Tax rates

Taxes are imposed in Canada by the three levels of government. The federal government has the right to raise money by any mode or system of taxation while provincial legislatures are restricted to direct taxation within the province. Municipalities derive their incorporation with its associated powers, fiscal and otherwise, provincially and are thus also limited to direct taxation.

A direct tax is generally recognized as one demanded from the very person who is individually required to pay it. This concept has limited the provincial governments to the imposition of income tax, retail sales tax, succession duties and an assortment of other direct levies. In turn, municipalities acting under provincial legislation tax real estate, water consumption and places of business. The federal government levies taxes on income, excise taxes, excise and customs duties, and a sales tax.

Since 1941 a series of federal-provincial tax agreements has been concluded to promote the orderly imposition of direct taxes. The duration of each agreement was normally five years. Under earlier agreements, the participating provinces undertook — in return for compensation — not to use, or permit their municipalities to use, certain of the direct taxes. These were replaced by arrangements under which the federal

personal and corporation income tax otherwise payable in all provinces and the estate tax otherwise payable in three provinces were abated by certain percentages to make room for provincial levies.

Federal tax amendments resulting from tax reform, effective for the most part from 1972, included a new personal income tax rate structure not designed to be abated in the previous way. At the same time the federal estate tax was terminated. As a result, the arrangement under which federal taxes are abated has general application only for the corporation income tax. All provinces impose taxes on the income of individuals and corporations but only one province, Quebec, imposes taxes on property passing at death. The federal government has tax collection agreements under which it collects provincial personal income taxes for all provinces except Quebec and provincial corporation income taxes for all provinces except Ontario and Quebec. Quebec imposes succession duties and collects them.

Federal taxes

22.6.1

Individual income tax. The federal government has adopted a tax system in which taxpayers volunteer the facts about their incomes and calculate the taxes they must pay. Every individual resident in Canada is liable for the payment of income tax on all his income regardless of where it is earned. A non-resident is liable for tax only on income from sources in Canada. Residence is the place where a person resides or where he maintains a dwelling ready at all times for his use. There are also statutory extensions of the meaning of resident to include a person who has been in Canada for an aggregate period of 183 days in a taxation year, a person who was during the year a member of the armed forces of Canada, an officer or servant of Canada or of any one of its provinces, or the spouse or dependent child of any such person. The extended meaning of resident also includes employees who go from Canada to work under certain international development assistance programs.

Canadian tax law uses the concepts of income and taxable income. Income means income from all sources inside or outside Canada and includes income for the year from businesses, property, offices and employment. Since January 1, 1972, it has also included half of any capital gains.

In computing income, an individual must include benefits from employment, fees, commissions, dividends, annuities, pension benefits, interest, alimony and maintenance payments. Also included are unemployment insurance benefits, family allowance payments, scholarships in excess of \$500, benefits under a disability insurance plan to which his employer contributes and other miscellaneous items of income. A number of items are expressly excluded from income, including certain war service disability pensions, social assistance payments, compensation for an injury or death under provincial worker compensation acts, family income security payments and guaranteed income supplement which is a payment made to individuals over age 65 who have little or no income in addition to their old age pension.

Half of capital gains is included in income. Taxable capital gains are determined by deducting capital losses from capital gains and dividing by two. In the event that losses exceed capital gains, \$2,000 of allowable capital losses may be deducted from other income. Allowable capital losses that are not absorbed in the same year may be carried over to apply in other years. Losses on small business shares can be written off against other income without limit. Capital gains or losses relate to disposition of property. Other gains or losses, for example, resulting from a lottery or gambling, are not included. The sale of personal property at a price not exceeding \$1,000 and the sale of a home do not give rise to a capital gain or loss.

Certain amounts are deductible in computing income. These include contributions to a registered employee pension plan, premiums to a registered retirement savings plan, premiums under the unemployment insurance program, contributions to the Canada and Quebec pension plans, alimony payments and union dues. A taxpayer 18 years of age or over who does not own a house or whose spouse does not own one may deduct contributions up to \$1,000 a year to a lifetime maximum of \$10,000 to a registered home-ownership savings plan. The proceeds of such plans will be taxable

when they are paid to the taxpayer unless they are applied by him to the purchase of a home. An employee may deduct 3% of salary or wages up to a maximum of \$500 a year to cover expenses of earning his income. No receipts or details of actual expenditures are necessary to claim this deduction. Expenses of meals and lodging while away from home are deductible by employees who have to travel as they perform their work, such as employees who work on trains or who drive trucks. When a mother has her children cared for in order that she may work, she may deduct this expense subject to certain limitations. Expenses of moving to a new work location are deductible from income earned in the new location. Students attending universities, colleges or certain other certified educational institutions in Canada may deduct their tuition fees.

An individual carrying on a business may deduct business expenses. These include wages, rents, depreciation (called capital cost allowances), municipal taxes, interest on borrowed money, reserves for doubtful debts, contributions to pension plans or profit-sharing plans for his employees, and bad debts.

Having computed this net income, an individual calculates taxable income by subtracting certain personal exemptions and deductions. Before 1974 the levels of exemptions and deductions were fixed from time to time by Parliament. In the 1974 taxation year a mechanism was introduced for indexing personal income tax that results in automatic adjustments each year to reflect the inflation rate in the levels of exemptions. The indexed personal exemptions for each year are based on such factors as married or single status, dependent children, other dependents, age (if 65 or over) and certain disabilities. Exemptions for married status or dependent children may be reduced depending on income of a spouse or children. Details are provided in an annual tax guide which is sent to each taxpayer; copies are also available in post offices and district taxation offices.

An individual may claim a deduction for medical expenses and charitable donations in computing taxable income. A taxpayer is also able to deduct up to \$1,000 of Canadian investment income from interest, dividends or capital gains. In addition, a taxpayer who is 65 or over is able to deduct up to \$1,000 of his private pension income including amounts he receives from pension plans and from annuities under registered retirement savings plans and deferred profit sharing plans. A taxpayer under 65 may deduct up to \$1,000 of qualified pension income. This includes amounts received from a pension plan or as a consequence of death of a spouse. Students who attended designated educational institutions and were enrolled in a qualifying educational program are entitled to a deduction of \$50 per month for each month of the qualifying year. Individuals who have incurred business losses in other years may deduct these in computing taxable income. Individuals may also deduct up to \$2,000 of any carried-over capital losses against the year's non-capital income.

The amount of tax is determined by applying a schedule of progressive rates to taxable income. The tax bracket limits are adjusted yearly by means of the indexing mechanism. Thus taxpayers are prevented from being pushed into higher marginal tax brackets in the absence of real growth in their income. The schedule of federal marginal tax rates for the 1979 taxation year (as of January 1979) started at 6% on the first \$829 of taxable income and increased to 43% on taxable income in excess of \$99,480. The rates were reduced in 1977 as part of the revised federal-provincial fiscal arrangements. The new arrangements contained a transfer of tax room to the provinces whereby federal tax rates were reduced and provincial tax rates were increased. The net effect of this transfer leaves the combined federal and provincial tax burden on individuals unchanged.

After all calculations are made, there is deducted from federal tax otherwise payable an amount called the federal tax reduction. In 1979, this was equal to 9% of tax otherwise payable with a minimum reduction of \$200 and a maximum reduction of \$500. There was also a refundable child tax credit of up to \$218 for each dependent child under 18. The threshold family income level up to which full child credit benefits were paid was \$19,620. These amounts are also indexed to changes in the rate of inflation. The credit is reduced by 5% of family income in excess of this threshold and is claimable by the parent who receives family allowances. In respect of the child where the credit exceeds tax payable the excess is refunded to the claimant.

Currently, individuals who reside outside Canada but are deemed to be residents in Canada for tax purposes (such as diplomats and others posted outside the country) must pay an additional federal tax of 43% of their tax otherwise payable. This tax corresponds to the income tax imposed by the provinces on their residents. In a province with a tax collection agreement with the federal government, taxes are imposed on residents as a per cent of federal tax otherwise payable (before the tax reduction and refundable child credit).

To a large extent, individual income tax is payable as income is earned. Taxpayers on salary or wages have tax deducted from pay by the employer. The balance of the tax, if any, or any refund of previous over-payments is payable at the time of filing the tax return. The deadline for individual income tax is April 30 for income of the previous calendar year. Individuals with more than 25% of income in a form not subject to tax deductions at source must pay tax by quarterly instalments. Returns of these individuals must be filed on or before April 30 of the following calendar year. Farmers and fishermen pay two-thirds of tax on or before December 31 each year and the remainder on or before April 30 of the following year. Table 22.15 shows the amount of personal income tax payable on various levels of income in 1979.

Canadian employers are required to deduct and remit to the government the estimated income tax in respect of the amounts paid to their employees as wages and

Customs duties were once the chief source of revenue for the country. Now individual income taxes are by far the largest source and in 1978 provided \$23.2 billion for the consolidated government revenue. More than 74% of the 8.75 million taxpayers were wage-earners or salary-earners and most of their income tax was collected through payroll deduction by their employers.

salaries. The government provides employers with deduction tables to guide them in calculating the amount of federal and provincial income taxes, Canada Pension Plan contributions and unemployment insurance premiums to be withheld.

Corporation income tax. The Income Tax Act levies a tax upon the worldwide income of corporations resident in Canada and upon the income attributable to operations in Canada of non-resident corporations carrying on business in Canada. Half of capital gains must be included in income. In computing income, corporations may deduct operating expenses such as wages and salaries, costs of goods sold, municipal real estate taxes, reserves for doubtful debts, bad debts and interest on borrowed money.

Corporations may deduct over a period of years the capital cost of all depreciable property. The normal capital cost allowances are computed each year on the diminishing balance principle. Regulations establish a number of classes of property and maximum rates. Typical rates include 5% for buildings, 20% for machinery and 30% for automobiles. Accelerated depreciation (full write-off in two years) is allowed on machinery and equipment acquired by manufacturers and processors after May 8, 1972 for use in Canada.

Research and development (R&D) expenditures qualify for an immediate deduction from income. Since 1978 an additional 50% deduction has been allowed for increments in R&D expenditures which are defined as increases in R&D activity over a three-year base period.

A corporation whose principal business is mining, oil production or a related activity may deduct Canadian exploration expenses from income from any source in the year in which the expenses are incurred and any unused balance can be carried forward indefinitely. Individuals and corporations which do not meet the principal business test may deduct 100% of Canadian exploration expenses incurred between May 25, 1976 and December 31, 1981 in the year incurred. For such taxpayers Canadian exploration expenses incurred on or before May 25, 1976 must be amortized at 30% on a declining balance basis. For all corporations, the amount which may be deducted for Canadian

development expenses may not exceed 30% of the unamortized balance. Development expenses for new mines incurred after November 16, 1978 are treated as Canadian exploration expenses.

Taxpayers with resource profits are entitled to a resource allowance equal to 25% of resource production profits calculated after operating expenses and capital cost allowances but before the deduction of interest expense, exploration and development expense and depletion. In addition to the other deductions, a taxpayer with resource profits may deduct earned depletion in computing his income for a taxation year. Generally, the earned depletion deduction for a particular taxation year is the lesser of the earned depletion base (one-third of qualifying expenditures to date less previous claims) and 25% of the resource profits after deduction of exploration and development expenses. Canadian exploration and development expenses and specified mining assets are qualifying expenditures.

Supplementary depletion is earned by investments in enhanced recovery systems in an oil field, at a rate of \$1.00 for every \$2.00 expenditure, and by investments in non-conventional oil projects, at a rate of \$1.00 for every \$3.00 expenditure. Supplementary depletion can be written off by corporations at a rate of 50% of income. Additional depletion on frontier oil or gas wells, 66⅔% of eligible expenditures, can be written off up to the amount of income.

Provincial royalties and mining taxes are not deductible in computing taxable income for federal purposes.

Capital equipment and facilities for a new mine may be written off immediately against income from the mine. The assets eligible for this accelerated depreciation include buildings, mining machinery, processing facilities and such social capital as access roads, sewage plants, housing, schools, airports and docks. The accelerated write-off provision for new mines will also apply in the case of a major expansion of an existing mine where there has been at least a 25% increase in milling capacity.

Taxpayers operating timber limits receive an annual cost allowance. The rate of the allowance is based on the amount of timber cut in the year.

In computing taxable income, corporations may deduct dividends received from other Canadian taxable corporations and also from certain non-resident affiliates. Business losses may be carried back one year and forward five years and deducted in computing taxable income. Corporations may also deduct donations to charitable organizations up to a maximum of 20% of their income.

The standard rate of corporation income tax is 46%. A special deduction reduces this rate on Canadian manufacturing and processing profits to 40%. In order to make room for provincial corporation income taxes (which range from 5% to 15%), the provinces have been granted an abatement of 10% of federal tax otherwise payable on income earned in a province.

A small business deduction reduces the standard federal rate of tax on certain business income to 25%; this rate is reduced to 20% on Canadian manufacturing and processing profits. This small business deduction is restricted to private Canadian corporations which are not controlled by a non-resident or by a Canadian public corporation. It applies only to income from an active business carried on in Canada and not to investment income. The maximum amount of taxable income on which the deduction may be calculated is \$150,000 in any one year. A corporation is entitled only to this deduction until it has accumulated \$750,000 of retained income since 1971. A Canadian controlled private corporation that carries on a non-qualifying business is eligible for a similar tax reduction, but its rate on non-qualifying and qualifying Canadian business income is reduced to 33⅓% rather than 25%. Non-qualifying business income earned by a corporation means the income from certain professions, the income from certain personal services or the income from the provision of certain management and other administrative services. This tax reduction is subject to the same \$150,000 annual and \$750,000 cumulative limits that apply to the general small business deduction.

A corporation that qualifies as an investment corporation pays tax at a standard federal rate of approximately 29%. The investment income (other than dividends) of a

private corporation is subject to the standard rate of federal tax (that is, 46% before provincial abatement) but an amount not exceeding 16⅔% of such income is refunded when dividends are paid to shareholders. The 10% abatement granted to the provinces similarly applies to all of the above special rates.

Dividends received by a private corporation from portfolio investments are subject to a special 25% tax but this is refunded when dividends are paid to shareholders.

Special rules are provided for the taxation of special-purpose companies such as mutual fund corporations, life insurance companies, non-resident-owned investment companies and co-operatives.

A corporation may reduce its tax otherwise payable by a credit for taxes paid to foreign governments on foreign source income. This credit may not exceed the Canadian tax related to such income. A corporation may also deduct from its tax an amount equal to two-thirds of any logging tax paid to a province not exceeding 6⅔% of its income from logging operations in the province. (At present only Quebec and British Columbia impose logging taxes.) Corporations are required to pay their tax by monthly instalments throughout their taxation year.

Both corporations and individuals are permitted a tax credit in respect of the cost of qualified buildings and equipment to be used in the processing of goods, farming, fishing, logging, production of minerals, oil and gas, or the storage of grain. In the November 16, 1978 budget the investment tax credit, which was to expire June 30, 1980 was extended indefinitely and expanded to include expenditures on rail, air, water and long-haul road transportation equipment. The investment tax credit also applies to research and development expenditures. The basic rate was raised to 7½%. Higher tax credit rates apply in certain regions, to investments made by small business and to expenditures on research and development. Another tax credit available to private business firms is the employment tax credit which provides a subsidy to employers for hiring individuals previously unemployed.

Taxation of non-residents. An individual or corporation not resident in Canada is liable for Canadian income tax on income from employment or from carrying on business in Canada and on half of capital gains less losses on disposals of taxable Canadian property. The taxation of capital gains may be restricted by the provisions in tax treaties between Canada and other countries. The expression "carrying on business in Canada" includes producing, growing, packaging or improving any article in Canada and also soliciting orders or offering anything for sale in Canada through an agent or servant. However, this is usually modified by tax treaties so that an enterprise of the other country is taxed by Canada on its industrial and commercial profits only if it carries on business through a permanent establishment in this country.

The taxable income of non-resident individuals derived from employment or carrying on business or from capital gains in Canada is taxed under the same schedule of rates as are Canadian resident individuals.

Income earned by non-resident corporations carrying on business or from capital gains in Canada is taxed at the regular rates of corporation income tax. The distributable business earnings of a branch of a non-resident corporation are also subject to an additional tax often referred to as a branch tax. This tax applies to the branch earnings after taxes that are not reinvested in the business in Canada.

Certain specific items of income paid to non-residents from sources in Canada are subject to a 25% tax withheld at source by the Canadian payer. This non-resident withholding tax applies to interest (except interest on certain government and long-term corporate bonds and interest paid to certain exempt lenders), dividends, rents, royalties (including royalties from motion pictures and television films), management fees, income from a trust or estate, alimony, pension benefits (other than the old age pension and the Canada Pension Plan or Quebec Pension Plan benefits), payments from deferred income plans and the taxable portion of annuities.

The 25% rate of non-resident withholding tax may be modified by tax treaties. The rate of tax applicable to dividends is reduced by five percentage points in the case of dividends paid by a corporation that has a degree of Canadian ownership. Generally, a corporation is regarded as having a degree of Canadian ownership where 25% of its

equity and voting shares are owned by Canadians or corporations controlled in Canada, or where the voting shares of the corporation are listed on a Canadian stock exchange and no more than 75% of its issued outstanding voting shares are owned by a non-resident alone or in combination with related persons.

Non-residents who receive from sources in Canada only the kinds of income subject to the non-resident withholding tax do not file returns to Canada. However, those who receive rents on real property, timber royalties, pension benefits or proceeds from deferred income plans may elect to file returns and be taxed at either personal or corporation rates.

Estate and gift taxes. The federal government formerly imposed an estate tax and a tax on gifts. They do not apply to deaths occurring after 1971 or gifts made after 1971.

Excise taxes. The Excise Tax Act levies a general sales tax and special excise taxes. These taxes are levied on goods imported into Canada as well as on goods produced in Canada. They are not levied on goods exported.

The general sales tax rate is 9%. Alcoholic beverages and tobacco products are taxed at a rate of 12%. Motor gasoline and diesel fuel are subject to specific tax rates. The federal sales tax is levied on the manufacturer's sale price of goods produced or manufactured in Canada or on the duty-paid value of goods imported into Canada. Duty-paid value includes the amount of customs duties, if any. For alcoholic beverages and tobacco products the sale price for purposes of the sales tax includes excise duties levied under the excise act. The rate of sales tax on a long list of construction materials and equipment for buildings is 5%.

Some goods are exempt from sales tax. Drugs, electricity, fuels for lighting or heating, all clothing and footwear, foodstuffs and a comprehensive list of energy conservation, transportation and construction equipment are exempt. In addition articles and materials purchased by public hospitals and certain welfare institutions are not subject to sales tax. The products of farms, forests, mines and fisheries are, to a large extent, exempt as is most equipment used in farming and fishing. Machinery and equipment used directly in production, materials consumed or expended in production and equipment acquired by manufacturers or producers to prevent or reduce pollution to water, soil or air from their manufacturing operations are all exempt. A number of items are exempt when purchased by municipalities. These and other exemptions are set forth in the Excise Tax Act.

The Excise Tax Act also imposes a number of special excise taxes in addition to the sales tax. Where these are ad valorem taxes they are levied on the same price or duty-paid value as the general sales tax. Those levied as at December 31, 1978 are given in Table 22.16.

Excise duties. The excise act levies taxes (referred to as excise duties) upon alcohol, alcoholic beverages other than wines and tobacco products. These duties are not levied on imports but the customs tariff applies special duties to these products equivalent to the excise duties levied on the products manufactured in Canada. Exported goods are not subject to excise duties.

The duties on spirits are on a proof gallon basis. They do not apply to denatured alcohol intended for use in the arts and industries, or for fuel, light or power, or any mechanical purpose. Canadian brandy (distilled exclusively from juices of native fruits without the addition of sweetening materials) is subject to an excise duty. Excise duties are imposed on tobacco, cigars and cigarettes in addition to the special excise taxes.

Customs duties. Many goods imported into Canada are subject to customs duties at various rates as set out in the customs tariff. Customs duties which once were the chief source of revenue for the country have declined in importance as a source of revenue to the point where they now provide less than 10% of the total. Quite apart from its revenue aspects, however, the tariff still occupies an important place as an instrument of economic policy.

The customs tariff provides for four sets of rates — general preferential, British preferential, most-favoured-nation and general. The general preferential rates apply to certain goods imported from designated developing countries.

The British preferential rates are applied to goods shipped directly to Canada from designated countries which are or were members of the British Commonwealth; rates lower than the British preferential are applied on certain goods imported from designated Commonwealth countries.

The most-favoured-nation rates apply to goods from countries that have been accorded tariff treatment more favourable than the general tariff but that are not entitled to British preferential or general preferential tariffs. Canada has most-favoured-nation arrangements with almost every country outside the Commonwealth. The most important arrangement is the General Agreement on Tariffs and Trade (GATT) under which multilateral reductions in most-favoured-nation tariff rates have been negotiated since the late 1940s.

The general tariff applies to imports from countries not entitled to the British preferential, general preferential or most-favoured-nation treatment. Few countries are in this category and they are not significant in terms of trade coverage.

In all cases where customs duties are applied there are provisions for drawback of duty on imports of materials used in the manufacture of products later exported. These drawbacks assist Canadian manufacturers to compete with foreign manufacturers of similar goods.

Provincial taxes

22.6.2

All of Canada's provinces levy a wide variety of taxes, fees, licences and other forms of imposition. Among such levies, a relatively small number account for about 75% of total provincial revenue from own sources. Only the more important levies are briefly described here.

Personal income tax. All provincial governments levy a tax on the income of individuals who reside within their boundaries and on the income earned by non-residents from sources within those boundaries. Rates of provincial individual income tax are expressed as percentages of basic federal tax, with the exception of Quebec which has its own system. The basic federal tax on which provinces apply their rates is the federal tax after the dividend tax credit but before any foreign tax credit and special federal tax reductions.

In accordance with the 1977 fiscal arrangements, as outlined in Section 22.3.3, new provincial rates were introduced in 1977 to take full advantage of the larger portion of the income tax field made available to provincial governments. The rates in 1978 were as follows: Newfoundland 58%; Prince Edward Island 50%; Nova Scotia 52.5%; New Brunswick 54%; Ontario 44%; Manitoba 54%; Saskatchewan 53%; Alberta 38.5%; and British Columbia 46%. For personal income tax, the federal government acts as collection agent for all provinces except Quebec.

In Quebec, provincial income tax is not related to basic federal tax but is levied at graduated rates which take into account the federal tax abatement granted to Quebec taxpayers pursuant to the province's contracting out all shared-cost programs in 1964. Due to the reduction in basic federal tax entailed by financing measures for established shared-cost programs, introduced in the 1977 fiscal arrangements, the former abatement of 24% granted to Quebec taxpayers had to be recalculated. As a result, this abatement was set at 16.5% so as to correspond to the former 24%. The rates are progressive, varying from 13% on the first \$577 of taxable income to a maximum of 33% on income exceeding \$60,714 in 1978. The determination of taxable income is based on exemptions and deductions somewhat similar to those for the federal tax. Quebec does not participate in the federal tax collection agreements and therefore collects its own.

Ontario, Manitoba, Alberta and British Columbia have introduced tax credit schemes which are administered, at a small fee, through the federal tax collection machinery. Manitoba and Saskatchewan have a surtax on provincial income tax payable in excess of a certain amount.

Tax Rebate Discounting Act. Tax rebate discounting is a practice whereby a taxpayer, who expects a refund on income taxes paid or a tax credit, sells his anticipated refund for

an amount less than the expected full refund. The Tax Rebate Discounting Act, passed by Parliament in April 1978, states that the taxpayer must receive at least 85% of the expected full refund. The consumer and corporate affairs department enforces the act jointly with the RCMP and some provinces and co-ordinates enforcement activities.

Corporation income tax. All provinces levy a tax on the taxable income of corporations. In provinces other than Quebec and Ontario, the provincial corporation income tax is imposed on the same basis as that established for federal corporation income tax purposes, and is collected by the federal government under tax collection agreements. In Quebec and Ontario, the determination of corporation taxable income follows closely, but not exactly, the federal rules and each collects its own levy. Corporate taxable income earned in a province is eligible for the 10% federal abatement to compensate corporations for provincial taxes payable. This 10% abatement does not apply to income earned in Yukon where corporate income tax is not imposed.

The rate that applies in Nova Scotia is 12%; Prince Edward Island 10%; Quebec 12%; Alberta 11%; and Northwest Territories 10%. Six provinces introduced a preferential low tax rate for small business income. The dual corporate rates for these provinces are: Newfoundland 14%/12%; New Brunswick 12%/9%; Ontario 12%/9%; Manitoba 15%/13%; Saskatchewan 14%/12%; and British Columbia 15%/12%.

Business taxes. Quebec, Ontario, Manitoba and British Columbia impose a tax on paid-up or utilized capital of corporations which have a permanent establishment within their boundaries. The rate is $\frac{1}{2}$ of 1% in Quebec, Manitoba and British Columbia, and $\frac{3}{10}$ of 1% in Ontario. Certain types of companies such as banks, railway, express, trust and insurance companies are subject to special rules for computing taxable paid-up capital or special taxes, licences or fees applicable in such cases. Quebec has a place of business tax of \$50 for companies whose paid-up capital exceeds \$25,000 and \$25 when below that amount.

Gift tax. In Quebec and Ontario a gift tax is levied and collected on the aggregate taxable value of gifts made in one year by a donor resident in a province as well as on a gift of real property situated within a province made by a donor who is not a resident in the province. The rates in Ontario range from 15% on the first \$25,000 to 50% on gifts in excess of \$200,000, while in Quebec the rates range from 20% to 35% on the aggregate taxable value. There are exemptions for gifts made to a spouse or charitable organization, deductions for gifts made to other recipients up to an aggregate annual amount, and credits for the tax levied by other jurisdictions on property situated outside the province.

Succession duties. Succession duty is levied on property of the deceased situated in a province regardless of where the deceased was domiciled at the time of death as well as on the dutiable value of property passing to the beneficiary who is a resident in a province. The rate depends on the net value of the whole estate wherever situated, the amount of property passing to the beneficiary, and the relationship of the beneficiary to the deceased. As of January 1978 only two provinces were still levying and collecting succession duties: Quebec and Ontario.

Provincial sales tax. All provinces except Alberta tax at a retail level a wide range of consumer goods and services purchased in or brought into the province. The tax is payable on the selling price of tangible personal property, defined to include certain services, purchased for own consumption or use and not for resale. Each provincial act, however, specifies a number of goods that are exempt. Exemptions include items related mainly to necessities of life and to material used in the farming or fishing industries. Provincial tax rates were temporarily reduced in 1978 in accordance with the federal retail sales tax reduction plan as follows: Newfoundland 11% to 8%; Prince Edward Island, Nova Scotia and New Brunswick 8% to 5%; Ontario 7% to 4%; Manitoba 5% to 2%; and Saskatchewan 5% to 3%. British Columbia reduced its sales tax to 5%. Quebec, with an 8% rate, did not participate in the plan. Quebec abolished the sales tax on clothing, textiles, shoes and furniture, excluding appliances.

Gasoline and diesel fuel oil taxes. Each province and both territories impose a tax on the purchase of gasoline and diesel fuel by motorists and truckers and other fuel intended to generate motive power, with the exception of Alberta as of April 1, 1978. A number of activities such as farming, fishing, mining or logging are either exempt from motive fuel taxation or are taxed at a preferred rate.

Tobacco taxes. A tax on consumers of tobacco products is levied in all provinces and both territories. Cigarettes are taxed on a unit basis at rates ranging from 0.32 of one cent per cigarette in Alberta and Northwest Territories to 1.35 cents each in Newfoundland. The tax on cigars is calculated as a percentage or as an amount based on the final selling price. These taxes are usually collected at the wholesale level to facilitate collection and administration but may also be collected by retail dealers acting as collection agents of the province.

Amusement taxes and race track taxes. Each province with the exception of Newfoundland, Manitoba, Saskatchewan, Alberta and British Columbia has a tax on admission to places of entertainment. In Quebec, this tax is collected by municipalities which retain the proceeds even though the rate is determined by an act of the provincial government. In Manitoba and Saskatchewan the province does not levy the tax but has given the right to impose an admissions tax to its municipalities. In addition, all provinces levy a tax on all legal wagering on horse races in the province. The federal government also has a pari-mutuel-levy of one-half of 1% on monies wagered. This is for the supervision of race tracks.

Tax on premium income of insurance companies. All provinces and both territories impose a tax on the premium income of insurance companies. Ontario imposes a tax of 3% calculated on gross premiums and an additional tax of one-half of 1% on the premium income from property insurance. British Columbia levies a tax of 2% on gross premiums and 5% on the premiums paid to unlicensed insurers or reciprocal exchange. All other provinces tax premium income at the rate of 2%. Fire insurance comes under a separate act in each of the provinces and territories with the exception of Ontario and Manitoba.

Tax on logging operations. Quebec and British Columbia levy a tax on income from logging operations of individuals, partnerships, associations or corporations. The rate of taxation is 10% in Quebec and 15% in British Columbia on net income in excess of \$10,000; if the net income is greater than \$10,000 the whole amount is taxable with no basic exemption. In Quebec 33.3% of the tax is allowed as a deduction from provincial income tax. In British Columbia the tax credit allowed from provincial corporation income tax is 33.3% of logging taxes paid. The federal income tax also allows a credit which is the lesser of two-thirds of the logging taxes paid to a province or 6% of the logging income earned in a province.

Hospitalization and medical care programs. Ontario, Alberta, British Columbia and Yukon levy premiums and Quebec a payroll tax, to help finance their hospitalization and medical care programs. The remaining provinces and territory finance the provincial share of their programs out of general revenue. (For details see Chapter 5, Health.)

Motor vehicle licences and fees. Each province levies a fee on the compulsory registration of a motor vehicle whereupon the vehicle is issued with licence plates. The fees vary from province to province and, in the case of passenger cars, may be assessed on the weight of the vehicle, the wheel base, the number of cylinders of the engine or at a flat rate for specified regions within a province or territory. The fees for commercial motor vehicles and trailers are based on the gross or curb weight for which the vehicle is registered, that is, the weight of the vehicle empty plus the load it is permitted to carry. Every operator or driver of a motor vehicle is required to register periodically and pay a fee for a driver's licence. The licences are valid for periods of from one to five years and the fees vary from \$1 to \$7 a year.

Land transfer taxes. Ontario levies a tax based on the price at which ownership of land is transferred. The tax for Canadian residents is 0.3% on the purchase up to \$35,000 and

0.6% on anything in excess of that amount; for non-residents the tax is 20% of the purchase price. In addition, Ontario levies a tax of 20% on the increase in value on the sale of designated land (all real property except Canadian resource property). Quebec levies a 33% tax on the value of immovable property transferred to non-residents. Municipalities may levy duties on immovable property transferred. In Alberta, a fee is charged proportional to the registered value of land; \$10 for the first \$10,000 and \$1 for each additional \$1,000 up to \$100,000, and 50 cents per \$1,000 in excess of that amount. British Columbia and Saskatchewan do not have a land transfer tax but have an equivalent in land title fee which is based on land value.

Provincial property taxes. Most provinces levy, in varying degrees, real property taxes. In Prince Edward Island and New Brunswick, where services formerly carried out by municipal authorities were taken over by provincial governments, the real property tax field is shared by both provincial and municipal governments. The provincial governments levy a flat rate real property tax on a province-wide basis and each municipality has its own separate rate as required to meet its expenditure. All collections, however, are effected by the provinces which remit the municipal share to individual municipalities. Some provinces impose property taxes of limited application on land in unorganized areas not subject to a municipal rate. Nova Scotia imposes a property school tax on that portion of a land holding in excess of 404.7 hectares. A provincial property tax is levied in Ontario and Saskatchewan on the assessed value of real property in municipally unorganized territories where residents may enjoy provincial services. British Columbia's provincial property tax is levied on the assessed value of land and improvements in unorganized (non-municipal) areas at different rates between farmland and wild land.

22.6.3 Local taxes

For purposes of financial statistics local government is comprised of three principal categories — municipalities, local school authorities and special purpose authorities. Consequently, local taxes are levied by either one of these entities or by all of them depending upon the taxing powers granted to each of them by their respective provincial legislatures. For more than a century, the main source of revenue of local governments has been related to real properties within their jurisdictions. Various taxes have been gradually implemented to supplement the real property tax from which, however, they still derive the bulk of their revenue.

Local property tax. Municipalities throughout Canada levy taxes on real properties situated within their boundaries. Generally speaking, they set the rates and collect the proceeds of their own levy and levies made on behalf of other local governments in their area, such as local school authorities. However, in most of Quebec outside the Montreal area and in the unorganized parts of Ontario, school boards levy and collect their own real property taxes directly.

The real property tax rate is generally expressed in mills (rate per \$1,000 of the base) or as a rate per \$100 of the base. This base is the assessed value of each property. Methods of determining assessed value vary widely not only among the provinces but also among municipalities within a province. However, for taxation purposes, assessed value is considered to be a percentage of actual market value.

Business taxes. Among other taxes that municipalities levy, business taxes rank next to the real property tax as a producer of municipal revenue. Such taxes are levied directly on the tenant or the operator of a business. The bases on which business taxes are levied are very diversified among the provinces. The most common in use are: a percentage of the assessed value of real property, value of stock-in-trade, the assessed annual rental value of immovables and the area of premises occupied for business purposes.

Water charges. In general, municipalities recoup all, or part, of the cost of supplying water through special charges for water consumption. Such charges take various forms such as a charge based on the actual consumption of water, or a water tax based on the rental value of the property occupied.

Sources

- 22.1 - 22.2.1 Public Finance Division, Social Statistics Field, Statistics Canada.
- 22.2.2 Statistics Section, Consulting and Statistics Division, Systems and Planning Branch, Department of National Revenue, Taxation; Business Finance Division, Economic Statistics Field, Statistics Canada.
- 22.2.3 Public Finance Division, Social Statistics Field, Statistics Canada.
- 22.3 Tax Analysis and Commodity Tax Division, Department of Finance.
- 22.4 - 22.5 Public Finance Division, Social Statistics Field, Statistics Canada.
- 22.6 - 22.6.1 Tax Analysis and Commodity Tax Division, Department of Finance; Information Services, Department of National Revenue, Taxation.
- 22.6.2 - 22.6.3 Public Finance Division, Social Statistics Field, Statistics Canada.

Tables

..	not available	e	estimate
...	not appropriate or not applicable	p	preliminary
—	nil or zero	r	revised
--	too small to be expressed	certain tables may not add due to rounding	

22.1 Consolidated government revenue and expenditure, after elimination of intergovernment transfers, fiscal years ended nearest Dec. 31, 1971-72 and 1975-77 (million dollars)

Source or function	1971	1972	1975	1976	1977 ^e
Consolidated government revenue by source					
Income tax	10,194.5	12,007.3	19,137.9	22,277.1	23,231.4
Individuals	3,181.4	3,897.5	7,839.4	7,558.4	8,119.4
Corporations	4,644.3	5,384.9	7,183.1	8,500.9	9,649.1
General sales tax	3,424.4	3,707.8	5,051.8	5,993.2	6,625.3
Real and personal property tax	7,500.1	8,153.5	13,973.3	16,109.9	17,073.1
Other tax revenue	6,455.5	7,440.0	13,105.5	15,309.5	16,924.6
Non-tax revenue					
Total	35,420.2	40,591.0	66,291.0	75,749.0	81,622.9
Consolidated government expenditure by function					
General government	2,284.0	2,506.1	4,447.3	5,416.4	5,649.0
Protection of persons and property	3,374.4	3,650.0	5,717.3	6,859.5	7,732.6
Transportation and communications	3,682.9	4,084.2	6,783.6	7,056.8	7,839.0
Health	4,886.2	5,478.0	8,961.0	10,140.3	11,236.2
Social welfare	6,967.8	8,665.6	16,155.8	18,308.6	20,924.4
Education	6,538.5	6,953.0	10,653.6	12,189.6	13,088.4
Natural resources	629.4	720.3	2,756.5	2,446.1	2,974.3
Recreation and culture	759.8	910.8	1,797.1	1,946.0	2,125.4
Housing	509.6	427.6	928.9	1,125.8	1,071.5
Foreign affairs	311.5	385.4	747.7	797.4	1,114.5
Debt charges	3,069.4	3,374.9	5,729.7	6,539.3	7,554.8
Other expenditures	3,313.7	3,852.7	7,132.0	7,754.2	8,203.8
Total	36,327.2	41,008.6	71,810.5	80,580.0	89,513.9
Consolidated government revenue less consolidated government expenditure	-907.0	-417.6	-5,519.5	-4,831.0	-7,891.0

22.2 Gross general revenue of the federal government, years ended Mar. 31, 1976-78 (million dollars)

Source	1976	1977	1978
Taxes			
Income			
Individuals	12,709	14,751	13,562
Corporations	5,748	5,377	5,828
On certain payments or credits to non-residents	481	451	503
General sales	3,515	3,929	4,427
Alcoholic beverages	548 ^r	559	566
Tobacco	64	719	706
Other commodities and services	55 ^r	68	79
Custom duties	1,887	2,097	2,312
Motive fuel taxes	425	600	598
Social insurance levies ¹	1,949	2,468	2,529
Air transportation taxes	30	72	77
Universal pension plan levies ²	1,457	1,637	1,790
Oil export charge	1,063	661	432
Other	12 ^r	70	99
Total, taxes	30,526	33,459	33,508
Natural resources			
Privileges, licences and permits	28	24	29
Sales of goods and services	50	59	61
Return on investments	968 ^r	1,139	1,070
Contributions to non-trustee public service pension plans	2,177	2,435	2,919
Postal receipts	305	352	443
Bullion and coinage	561	766	936
Fines and penalties	37 ^r	17	34
Miscellaneous	19	22	23
	32	40	31
Total, gross general revenue from own sources	34,703	38,313	39,054

¹Unemployment insurance.

²Canada Pension Plan.

22.3 Gross general expenditure of the federal government, years ended March 31, 1976-78 (million dollars)

Function	1976	1977	1978
General government	1,873	2,293	2,608
Protection of persons and property ¹	3,397	4,136	4,754
Transportation and communications ²	2,479	2,749	2,958
Health	2,781	3,305	3,129
Hospital care	1,745	2,019	1,764
Other	1,036	1,286	1,365
Social welfare	12,385	14,033	15,643
Universal pension plan	589	835	1,059
Old age security	3,934	4,336	4,861
Veterans' benefits	705	771	826
Unemployment insurance	3,328	3,659	4,351
Family allowances	1,957 ^r	1,980	2,123
Worker compensation	8	10	19
Assistance to disabled, handicapped, unemployed and other needy individuals	1,449	1,944	1,841
Other	415 ^r	498	563
Education	1,178	1,372	1,931
Natural resources	1,981	1,427	1,671
Agriculture, trade and industry, and tourism	1,918	2,065	1,873
Environment	290	308	317
Recreation and culture	346	353	424
Labour, employment and immigration	444	450	499
Housing	338	487	517
Foreign affairs and international assistance	748	797	1,115
Supervision and development of regions and localities	142	114	116
Research establishments	503	419	729
General purpose transfers to other levels of government	2,688	3,406	3,477
Transfers to own enterprises	521	556	665
Debt charges	2,832	2,943	3,529
Other	1	—	—
Total, gross general expenditure	36,845	41,213	45,955

¹Includes National Defence.²Includes Post Office.

22.4 Assets and liabilities of the federal government, as at Mar. 31, 1976-78 (million dollars)

Item	1976 ^r	1977	1978	Item	1976 ^r	1977	1978
Assets				Liabilities			
Cash on hand or on deposit	1,858	2,660	3,038	Payables	11,545	12,753	13,533
Receivables	567	276	271	Loans and advances	2	—	—
Loans and advances	26,044	26,612	27,315	Treasury bills	4,414	6,169	8,877
Investments	13,723	15,384	17,200	Canada Savings Bonds	15,517	16,304	18,011
Other assets	2,174	2,927	2,848	Other bonds	9,956	11,495	14,264
				Other liabilities	6,832	7,369	9,154
Total, assets	44,366	47,859	50,673	Total, liabilities	48,266	54,090	63,839

22.5 Gross bonded debt of the federal government, average interest rate, term of issue and place of payment as at Mar. 31, 1976-78

Item	1976	1977	1978
Bonded debt	\$'000		
Average interest rate	%		
Average term of issue	yr		
Place of payment			
Canada	\$'000		
New York	"		

22.6 Contingent liabilities of the Government of Canada, years ended Mar. 31, 1977 and 1978 (dollars)

Item	1977 ^r	1978
	Amount of guarantee	Amount of contingent liability
Borrowings by Crown corporations under guarantee or as agents of the government	2,207,388,100	1,554,889,499
Air Canada	23,565,100 ¹	15,183,786
Canadian National Railways	573,823,000 ²	573,823,000
Canadian Wheat Board	1,370,000,000	725,882,713 ³
Eldorado Nuclear Ltd.	—	—
Export Development Corporation	—	—
Petro-Canada	240,000,000	240,000,000

22.6 Contingent liabilities of the Government of Canada, years ended Mar. 31, 1977 and 1978 (dollars) (concluded)

Item	1977 ^r		1978	
	Amount of guarantee	Amount of contingent liability	Amount of guarantee	Amount of contingent liability
Other outstanding guarantees and contingent liabilities				
Loans made by lenders under Part IV of the National Housing Act, 1954 for home extension and improvements ^a	32,500,000	25,500,000	32,500,000	25,600,000
Insured loans made by approved lenders under the National Housing Act, 1954 ^{a, b}	25,000,000,000	15,130,000,000	25,000,000,000	17,874,000,000
Loans guaranteed under Advance Payments for Crops Act	—	—	10,871,368	4,638,919
Federal share of loan guarantees under federal-Ontario adverse weather program	—	—	3,054,083	583,690
Loans made by chartered banks and credit unions under the Farm Improvement Loans Act	370,800,000	124,200,000	429,634,429	127,602,824
Loans made by chartered banks and credit unions under the Fisheries Improvement Loans Act	10,800,000	8,500,000	44,587,612	12,027,755
Loans made by chartered banks and credit unions under the Small Businesses Loans Act	56,600,000	37,000,000	61,259,678	40,758,614
Loans made by chartered banks and credit unions under the Canada Student Loans Act ^c	1,166,300,000	640,800,000	1,249,411,468	678,932,801
Loans made by lenders under the Regional Development Incentives Act and the Regional Economic Expansion Act	26,915,000	21,816,000	27,934,000	23,684,000
Loans made by lenders under the Cape Breton Development Act	100,000,000	91,450,000	100,000,000	88,760,000
Canadian Commercial Corporation — disputed contract termination action	6,800,000	6,800,000	—	8,000,000
Loans to Indians or Indian bands, individuals, corporations or partnerships for the purpose of Indian economic development	42,705,427	29,323,823	21,000,830	20,147,452
Loans made by banks or other approved lenders for housing purposes as defined by the National Housing Act	20,463,972	20,163,265	23,874,660	23,221,990
Loans to Panarctic Oils Ltd. for its exploration program	12,000,000	12,000,000	14,725,438	14,725,438
Loans to Nanisivik Mines Ltd. for development of a town at Strathcona Sound, Baffin Island	2,990,606	2,990,606	4,570,000	4,493,257
Loans to the Manitoba Indian Brotherhood	—	—	200,000	186,668
Loans made by lenders under the General Adjustment Assistance Program	250,000,000	68,418,301	—	—
Loans made by banks to Canadair Ltd. to finance production of CL600 Challenger aircraft	50,000,000	—	70,000,000	61,200,470
Agreement with Bombardier/MLW to purchase two LRC train sets in the event that Amtrak does not purchase the train sets under a lease purchase agreement	9,000,000	—	9,000,000	—
Canadian National Railways bid bond to participate in a railroad project in Venezuela	7,500,000	—	7,500,000	—
Contracts of re-insurance and insurance against risk of loss in respect of capital projects outside of Canada	—	—	100,000,000	—
Account 1	—	—	50,000,000	—
Account 2	—	—	—	—
Loans made by lenders under the enterprise development program	—	—	250,000,000	98,548,122
Liability for insurance and guarantees under the Export Development Act	1,750,000,000	1,037,149,000	3,750,000,000	1,512,038,000
Insurance with respect to financial obligations incurred by air carriers re de Havilland DHC-7 aircraft	—	—	130,000,000	—
Indemnification of swine flu vaccine suppliers — Vote 26b, Appropriation Act No. 5, 1976	1,800,000	1,800,000	—	1,800,000
Insurance against accidents at nuclear installations in accordance with the Nuclear Liability Reinsurance agreement pursuant to Section 15 of the Nuclear Liability Act	—	—	—	923,767,000
Pending litigation relating to the crash of PWA aircraft Boeing 737 on February 11, 1978 at Cranbrook, BC	—	—	—	10,000,000
Unpaid treatment allowances — Veterans Affairs	—	—	5,200,000	5,200,000
Total, contingent liabilities	31,124,563,105	18,812,800,494	34,325,190,966	23,736,260,810
Loans made by approved lending institutions under the National Housing Act prior to 1954	Unstated	Indeterminate	Unstated	Indeterminate
Guarantees to owners of returns from moderate housing projects ^a	Unstated	Indeterminate	Unstated	Indeterminate

^rPound sterling converted to Canadian dollars at the exchange rate of \$2.1093 in effect on Mar. 31, 1978 (\$1.8127 Mar. 31, 1977).

^aBalances as at Jan. 1, 1977 and 1978.

^bLiability is subject to exchange rate in effect June 15, 1977.

^cLiability includes US\$91,788,671 converted to Canadian dollars at the exchange rate of \$1.1322 in effect on Mar. 31, 1978.

^dAs at Dec. 31, 1976 and 1977.

^eAs reported by approved lenders as at Dec. 31, 1976 and 1977.

^fIncludes contingent liability in respect of alternative payments to non-participating provinces.

^gAs at Dec. 31, 1977, Rental Guarantee Funds totalling \$9,438,000 (Dec. 31, 1976, \$8,832,000) were held by the Central Mortgage and Housing Corporation for the purpose of settling claims. In 1975 the last of the rental contracts expired.

22.7 Government of Canada public debt and interest payments thereon, years ended Mar. 31, 1973-78

Year ended Mar. 31	Gross debt \$'000,000	Net active assets \$'000,000	Net debt \$'000,000	Net debt per capita ¹ \$	Increase or decrease in net debt during year \$'000,000	Interest paid on debt \$'000,000	Interest paid per capita ² \$
1973	51,716	34,260	17,456	790.03	-481	2,105	96.43
1974	55,557	37,429	18,128	807.65	+672	2,549	115.36
1975	62,696	43,421	19,275	847.72	+1,147	3,164	138.78
1976	59,802	36,506	23,296	1,013.20	+4,022	3,908	169.97
1977	67,075	37,489	29,586	1,270.27	+6,290	4,714 ⁴	202.39 ⁴
1978	80,048	40,426	39,622	1,687.48	+10,036	5,540	235.94

¹Based on the official estimates of population for June 1 of the year indicated.

²Based on the official estimates of population for June 1 of the year immediately preceding the one indicated.

22.8 Revenue collected (net of refunds) by the Department of National Revenue, Taxation, years ended Mar. 31, 1974-78 (thousand dollars)

Year ended Mar. 31	Income tax ¹						
	Individual ²	Corporation	Special refundable tax	Total	Estate tax and succession duties ³	Total collections	
1974	13,967,315	4,087,710	-396	18,054,629	39,117	18,093,746	
1975	17,880,320	5,386,385	—	23,266,705	24,701	23,291,406	
1976	20,013,553	6,610,695	—	26,624,248	—	26,624,248	
1977	23,162,330	5,958,811	—	29,121,141	—	29,121,141	
1978	23,604,307	6,625,836	—	30,230,143	—	30,230,143	

¹Includes transfers to Old Age Security Fund.

²Includes non-resident withholding tax and Canada Pension Plan contributions by employers, employees and self-employed persons and unemployment insurance premiums.

³Includes federal estate taxes as well as succession duties and gift taxes collected on behalf of certain provinces.

22.9 Income taxes by industrial division, 1976-78 (million dollars)

Income taxes and year	Agriculture, forestry, fishing	Mining	Manufacturing	Construction	Transportation, communication, and other utilities	Wholesale trade	Retail trade	Finance	Services	Total
Book profit before taxes ¹										
1976	95.8	2,881.3	6,576.5	979.7	1,563.9	1,581.9	998.4	2,459.3	857.9	17,994.6
1977	104.3	3,500.8	6,837.1	775.3	1,901.0	1,412.4	1,007.0	2,569.1	1,082.7	19,189.8
1978P	..	..	..	..	..	..	..	..	..	..
Taxable income										
1976	190.2	2,079.5	5,850.5	1,032.9	994.6	1,738.5	1,225.8	2,804.0	1,180.8	17,096.7
1977	199.4	2,550.1	5,512.2	911.0	1,234.5	1,513.2	1,112.9	2,846.4	1,272.8	17,152.6
1978P	272.7	2,485.2	6,810.3	1,018.3	1,675.7	1,872.5	1,348.6	2,881.8	1,575.7	19,940.6
Federal income taxes										
1976	31.7	700.4	1,649.6	231.9	330.6	483.2	309.7	846.2	303.6	4,886.7
1977	33.8	851.2	1,499.5	211.9	411.3	408.2	257.9	826.4	315.9	4,816.0
1978P	46.0	815.6	1,819.1	236.7	517.8	504.7	310.9	803.0	377.0	5,430.8
Provincial income taxes										
1976	20.5	180.7	678.7	111.0	116.5	198.8	133.6	306.9	130.5	1,877.1
1977	21.2	218.2	637.6	97.5	143.6	163.8	119.7	308.8	137.3	1,847.5
1978P	31.0	234.4	839.6	112.3	205.4	221.6	154.5	328.8	179.7	2,307.3
Total income taxes										
1976	52.2	881.1	2,328.2	342.9	446.8	682.0	443.3	1,153.1	434.2	6,763.8
1977	54.9	1,069.4	2,137.1	309.3	554.8	572.1	377.6	1,135.1	453.2	6,663.5
1978P	77.0	1,050.0	2,658.7	349.0	723.2	726.3	465.4	1,131.8	556.7	7,738.1

¹After losses. Adjusted to exclude intercorporate dividends and net capital gains.

22.10 Allocation of taxable income, by province, 1973-78 (million dollars)

Province or territory	1973	1974	1975	1976	1977	1978P
Newfoundland	113.3	145.7	156.8	144.7	155.5	197.6
Prince Edward Island	19.6	26.9	31.1	29.3	28.8	31.7
Nova Scotia	188.8	260.4	319.5	287.1	306.7	364.9
New Brunswick	163.9	228.0	246.0	227.4	217.9	238.0
Quebec	2,307.2	3,244.5	3,402.5	3,375.1	3,111.9	3,783.1
Ontario	4,847.1	6,444.4	6,578.2	6,443.9	6,093.6	7,289.9
Manitoba	394.7	570.4	625.2	629.6	562.6	677.7
Saskatchewan	254.5	453.1	573.9	618.9	576.9	614.9
Alberta	1,129.5	2,221.4	3,486.7	3,251.8	3,878.9	3,956.6
British Columbia	1,428.2	1,703.8	1,718.8	1,852.4	1,942.0	2,479.4
Yukon	8.1	20.4	40.0	13.6	22.1	21.4
Northwest Territories	41.7	85.6	55.2	35.8	33.7	60.2
Other	141.7	164.7	222.9	187.0	221.9	225.1
Canada	11,038.4	15,569.2	17,456.9	17,096.7	17,152.6	19,940.6

22.11 Excise taxes collected, by commodity, years ended Mar. 31, 1976-78 (million dollars)

Commodity	1976	1977	1978
Sales tax ¹	3,515	3,929	4,427
Other excise taxes			
Cigarettes, tobacco and cigars	370	405	379
Jewellery, watches and ornaments	32	30	34
Matches and lighters	3	3	3
Oil export charge	1,063	661	432
Oil export tax	—	—	—
Special excise tax (gasoline)	425	600	598
Wines	12	10	11
Sundry commodities	19	35	42
Interest and penalties	3	3	4
Less refunds	-1	-1	-1
Total	5,441	5,675	5,929

¹Includes tax credited to the Old Age Security Fund.**22.12 Liabilities of provincial and territorial governments as at Mar. 31, 1977 and 1978 (thousand dollars)**

Province or territory and year	Short-term bank loan and over-drafts	Payables	Loans and advances	Treasury bills	Savings bonds	Bonds and debentures	Other securities	Deposits and other liabilities	Total
Newfoundland	1977 61,654 1978 50,102	17,201 21,741	96,598 97,680	38,252 63,821	— —	1,608,088 1,687,895	18,688 14,639	7,563 9,659	1,848,044 1,945,537
Prince Edward Island	1977 7,051 1978 9,605	20,997 28,725	14,235 22,161	6,000 4,000	— —	139,227 158,997	— —	22,790 20,279	210,300 243,767
Nova Scotia	1977 13,462 1978 113	164,972 190,107	160,787 163,215	— —	— —	1,293,200 1,410,369	5,001 6,001	78,730 60,492	1,716,152 1,830,297
New Brunswick	1977 5,000 1978 5,845	128,557 152,231	51,407 54,865	— —	— —	925,230 1,108,110	— —	40,798 46,016	1,150,992 1,367,067
Quebec	1977 130,917 1978 87,233	1,358,389 1,264,394	1,065,440 1,161,357	— —	702,221 655,254	4,813,486 5,354,406	21,021 314,998	475,556 859,785	8,567,030 9,697,427
Ontario	1977 — 1978 5,907	46,054 44,064	351,920 392,748	130,000 130,000	— —	13,063,747 14,911,471	— —	448,573 467,335	14,040,294 15,951,525
Manitoba	1977 117,225 1978 117,416	61,871 95,463	101,112 140,493	91,468 89,969	65,507 91,765	1,410,188 1,766,985	— —	265,578 192,399	2,112,949 2,494,940
Saskatchewan	1977 59,890 1978 80,300	24,588 24,042	11,942 10,098	26,612 77,337	3,325 —	1,446,138 1,676,016	3,282 —	68,551 59,999	1,644,328 1,927,792
Alberta	1977 90,817 1978 50,390	207,297 243,185	53,634 53,518	38,793 26,523	— —	1,988,576 2,365,813	— —	154,094 224,537	2,533,211 2,963,966
British Columbia	1977 54,571 1978 85,484	190,827 181,302	— —	422 —	— —	1,311,419 1,489,126	— —	84,924 119,733	1,642,163 1,875,645
Yukon	1977 — 1978 —	5,694 7,858	53,446 58,988	— —	— —	— —	— —	841 1,115	59,981 67,961
Northwest Territories	1977 — 1978 —	15,231 15,640	124,953 122,348	— —	— —	— —	— —	2,905 2,340	143,089 140,328
Canada	1977 540,587 1978 492,395	2,241,678 2,268,752	2,085,474 2,277,471	331,547 391,650	771,053 747,019	27,999,299 31,929,188	47,992 335,638	1,650,903 2,063,689	35,668,533 40,505,802

22.13 Liabilities guaranteed by provincial and territorial governments¹ as at Mar. 31, 1977 and 1978 (thousand dollars)

Province or territory and year	Bonds and debentures	Bank loans	Other	Total
Newfoundland	1977 220,266 1978 309,509	154,129 126,888	132,747 140,966	507,142 577,363
Prince Edward Island	1977 7,315 1978 6,654	2,269 1,244	688 672	10,272 8,570
Nova Scotia	1977 545,439 1978 656,605	45,743 54,423	20,984 20,984	612,166 732,012
New Brunswick	1977 894,746 1978 1,110,135	28,351 24,941	49,400 52,371	972,497 1,187,447
Quebec	1977 6,987,781 1978 8,655,385	994,441 959,892	146,490 279,448	8,128,712 9,894,725
Ontario	1977 5,513,349 1978 5,977,107	97,071 87,104	184,950 141,760	5,795,370 6,205,971

22.13 Liabilities guaranteed by provincial and territorial governments¹ as at Mar. 31, 1977 and 1978 (thousand dollars) (concluded)

Province or territory and year		Bonds and debentures	Bank loans	Other	Total
Manitoba	1977	1,866,222	—	12,623	1,878,845
	1978	1,859,651	—	12,014	1,871,665
Saskatchewan	1977	—	9,079	58,534	67,613
	1978	—	9,114	43,598	52,712
Alberta	1977	1,466,472	205,662	1,178,731	2,850,865
	1978	1,934,845	210,338	1,337,551	3,482,734
British Columbia	1977	4,934,609	—	48,301	4,982,910
	1978	5,650,830	—	50,138	5,700,968
Yukon	1977	—	—	5,665	5,665
	1978	—	—	5,420	5,420
Northwest Territories	1977	—	76	20,976	21,052
	1978	—	265	34,714	34,979
Canada	1977	22,436,199	1,536,821	1,860,089	25,833,109
	1978	26,160,721	1,474,209	2,119,636	29,754,566

¹Excludes liabilities of provincial government special funds guaranteed by provincial governments but considered as provincial government liabilities.

22.14 Bonds and debentures¹, by market, of provincial governments outstanding as at Mar. 31, 1977 and 1978 (thousand dollars)

Province and year		Domestic	Foreign			International	Total
			Traditional				
			United States	Europe	Other		
Newfoundland	1977	813,796	444,914	132,693	—	216,685	1,608,088
	1978	837,410	523,599	122,099	—	204,787	1,687,895
Prince Edward Island	1977	131,091	8,136	—	—	—	139,227
	1978	150,931	8,066	—	—	—	158,997
Nova Scotia	1977	785,129	439,771	18,985	—	49,315	1,293,200
	1978	874,981	471,745	18,359	—	45,284	1,410,369
New Brunswick	1977	505,667	355,020	—	—	64,543	925,230
	1978	592,663	353,700	—	48,204	113,543	1,108,110
Quebec	1977	4,087,519	1,068,441	141,172	32,682	185,893	5,515,707
	1978	4,484,948	1,054,971	186,396	32,682	250,663	6,009,660
Ontario	1977	10,479,130	2,532,181	52,436	—	—	13,063,747
	1978	11,940,724	2,922,320	48,427	—	—	14,911,471
Manitoba	1977	885,112	248,000	248,183	44,400	50,000	1,475,695
	1978	987,422	248,000	426,633	146,695	50,000	1,858,750
Saskatchewan	1977	1,083,697	215,766	—	—	150,000	1,449,463
	1978	1,199,520	326,496	—	—	150,000	1,676,016
Alberta	1977	1,878,923	109,637	—	—	16	1,988,576
	1978	2,263,015	102,789	—	—	9	2,365,813
British Columbia	1977	1,221,234	90,185	—	—	—	1,311,419
	1978	1,401,441	87,685	—	—	—	1,489,126
Total	1977	21,871,298	5,512,051	593,469	77,082	716,452	28,770,352
	1978	24,733,055	6,099,371	801,914	227,581	814,286	32,676,207

¹Includes savings bonds.

22.15 Personal income tax payable on various levels of income, 1979 (dollars)

Status	Income ¹	Federal income tax ²	Provincial income tax ³
Single taxpayer — no dependents	2,000	—	—
	3,000	—	2
	4,000	—	36
	5,000	34	103
	8,000	527	320
	10,000	882	476
	15,000	1,851	902
	20,000	2,925	1,415
	50,000	12,248	5,609
	100,000	31,199	13,948

22.15 Personal income tax payable on various levels of income, 1979 (dollars) (concluded)

Status	Income ¹	Federal income tax ²	Provincial income tax ³
Married taxpayer — no children	5,000	—	—
	8,000	118	140
	10,000	447	285
	15,000	1,364	688
	20,000	2,413	1,167
	50,000	11,413	5,242
Married taxpayer — two children under age 16	100,000	30,295	13,550
	5,000	—436	—
	8,000	—406	101
	10,000	—82	244
	15,000	819	640
	20,000	1,868	1,114
	50,000	11,226	5,159
	100,000	30,092	13,460

¹The taxpayer is assumed to be under age 65 and to receive wage or salary income. Family allowances, at 1979 rates, are added to income where applicable. The taxpayer is assumed to take the standard deduction of \$100 in respect of medical expenses and charitable contributions. In addition to personal exemptions, the employment expense deduction of 3% of wage and salary income to a maximum of \$500, and social security contributions, calculated at 1979 rates, are deducted from income in computing taxable income.

²Federal income tax includes the tax cut of 9%, minimum \$200, maximum \$500, as well as the refundable child tax credit (\$218) per dependent child under age 18. The tax calculations represent the income tax provisions as of January 1979.

³Provincial income tax is calculated at the standard rate of 44% of federal basic tax. No account is taken of the various provincial tax reductions or credits.

22.16 Special excise tax rates as at Dec. 31, 1978

Item	Tax
Cigarettes	3¢ per 5 cigs.
Cigars	20½% ad valorem
Pipe tobacco, cut tobacco, snuff	90¢ per lb.
Jewellery, including articles of ivory, amber, shell, precious or semi-precious stones, clocks and watches ¹ , goldsmiths' and silversmiths' products, except gold-plated or silver-plated ware for the preparation or serving of food or drink	10% ad valorem
Lighters	10¢ per lighter
Playing cards	20¢ per pack
Slot machines — coin, disc or token-operated games or amusement devices	10% ad valorem
Matches	10% ad valorem
Tobacco, pipes, cigar and cigarette holders and cigarette rolling devices	10% ad valorem
Wines ²	
Wines of all kinds containing not more than 7% absolute alcohol by volume	25¢ per gal
Non-sparkling wines containing more than 7% absolute alcohol by volume but not more than 40% proof spirit	50¢ per gal
Sparkling wines	\$2.50 per gal
Wines (additional excise taxes) ³	
Wines of all kinds containing not more than 7% absolute alcohol by volume	2½¢ per gal
Wines of all kinds containing more than 7% absolute alcohol by volume	5¢ per gal
Insurance premiums paid to British or foreign companies not authorized to transact business in Canada or to non-resident agents of authorized British or foreign companies	10% of net premium for property surety, fidelity and liability insurance. (Most other kinds of insurance are exempt.)
Air transportation tax on tickets purchased in or outside of Canada for transportation of persons	
(a) in the taxation area ⁴ (including travel in Canada)	8% ad valorem, maximum \$8
(b) beginning in Canada and ending outside the taxation area	\$8 ⁵
Automobiles, station wagons and vans designed for use as passenger vehicles ⁶	\$30 for the first 100 lb. in excess of the weight limit ⁷ \$40 for the second 100 lb. in excess of the weight limit \$50 for the third 100 lb. in excess of the weight limit \$60 for each additional 100 lb. in excess of the weight limit 1.5¢ per litre ⁸
Gasoline for personal use	
Air conditioners designed for use in automobiles, station wagons, vans or trucks	\$100 per unit

Almost all of the foregoing items, except insurance premiums and air transportation, are also subject to the general sales tax. Alcohol and tobacco products are subject to additional taxes under the Excise Act (referred to as excise duties).

¹Special excise tax only applies on the amount by which the sale price or the duty-paid value of the clock or watch exceeds \$50.

²These taxes apply only to wines manufactured in Canada. The customs tariff on wines includes a levy on imported wines to correspond to the taxes on domestic production.

³These taxes apply to both domestic and imported wines.

⁴Includes Canada, the islands of St. Pierre and Miquelon, and the US except Hawaii.

⁵Reduced to \$4 for a child under 12 travelling at a fare of 50% or more below the applicable fare; nil if the fare is 90% below the applicable fare.

⁶Excludes ambulances, hearses, vehicles for police or firefighting.

⁷The weight limit is 4,425 lb. for automobiles and 5,000 lb. for station wagons and vans.

⁸Reduced from 10¢ to 7¢ a gallon effective Aug. 25, 1978; the rate was converted to metric equivalent effective Jan. 1, 1979.

22.17 Number of taxpayers and amounts of income and tax, by selected cities, 1976, 1977 and 1978

City and province	1976				1977				1978			
	Taxpayers	Total income assessed \$'000,000	Federal tax payable \$'000,000		Taxpayers	Total income assessed \$'000,000	Federal tax payable \$'000,000		Taxpayers	Total income assessed \$'000,000	Federal tax payable \$'000,000	
Brantford, Ont.	30,099	405.0	51.5		31,419	457.5	49.7		29,053	457.6	70.6	
Calgary, Alta.	214,296	3,130.4	427.4		221,968	3,464.5	412.1		228,958	4,027.8	675.2	
Dartmouth, NS	33,678	3,171.5	47.6		34,545	450.1	43.9		36,382	498.3	76.2	
Edmonton, Alta.	241,847	3,517.2	479.5		254,527	4,037.5	489.3		253,879	4,400.1	751.5	
Guelph, Ont.	37,053	3,375.0	48.1		30,495	433.9	47.3		30,525	485.7	76.7	
Halifax, NS	66,800	805.3	94.9		67,428	867.5	88.1		69,952	972.0	152.2	
Hamilton, Ont.	16,867	2,776.4	282.3		152,199	2,286.3	258.8		131,132	2,093.4	335.9	
Hull, Que.	56,572	76.4	73.7		56,406	808.9	71.9		54,610	847.8	71.7	
Kingston, Ont.	36,555	502.7	65.2		35,837	531.6	58.1		35,895	594.0	95.7	
Kitchener-Waterloo, Ont.	78,639	1,045.0	132.1		79,726	1,140.6	124.6		80,092	1,290.5	204.7	
London, Ont.	106,397	1,451.9	187.9		106,504	1,566.8	172.0		110,098	1,800.3	289.0	
Moncton, NB	30,508	1,328.9	34.4		30,944	369.7	33.8		26,791	345.9	49.4	
Montreal, Que.	806,633	11,221.6	1,091.5		787,594	11,698.7	1,093.9		751,442	12,299.1	1,110.7	
New Westminster, BC	20,392	266.2	34.7		17,631	264.7	30.5		17,388	279.8	47.4	
Niagara Falls, Ont.	27,405	364.9	44.4		28,988	410.9	43.7		25,752	412.6	66.8	
Oakville, Ont.	27,639	464.9	70.5		28,278	517.9	67.5		29,703	593.7	113.9	
Oshawa, Ont.	46,090	464.2	89.2		45,288	701.6	82.2		46,360	805.6	138.6	
Ottawa, Ont.	200,162	3,035.0	411.1		213,940	3,494.3	417.3		218,539	3,935.0	685.9	
Peterborough, Ont.	28,845	338.0	46.2		26,798	383.4	40.3		26,494	429.8	19.3	
Quebec, Que.	145,712	2,398.5	196.1		152,924	2,361.5	224.1		154,628	2,561.1	228.3	
Regina, Sask.	63,298	819.9	114.0		64,883	980.2	107.6		65,868	1,083.3	182.4	
Saint John, NB	36,064	46.5	46.5		35,444	434.3	41.4		35,515	476.0	71.9	
St. Catharines, Ont.	55,370	793.7	101.8		57,610	894.3	101.0		58,368	990.6	162.2	
St. John's, Nfld.	47,253	263.4	68.5		48,081	601.0	60.9		47,930	631.7	102.8	
Sarnia, Ont.	31,672	563.4	68.3		32,174	567.5	72.3		30,491	553.7	97.6	
Saskatoon, Sask.	54,640	760.3	68.8		56,433	844.3	91.4		55,507	920.2	154.1	
Sault Ste Marie, Ont.	32,032	450.3	57.6		32,351	508.1	57.9		31,075	525.6	87.5	
Sherbrooke, Que.	34,971	443.1	57.5		32,535	450.2	38.0		37,366	581.4	47.6	
Sudbury-Copper Cliff, Ont.	56,210	815.5	108.9		53,161	831.7	94.7		50,332	817.3	128.0	
Sydney-Glace Bay, NS	41,007	437.7	44.3		42,774	485.3	41.7		43,632	528.1	71.2	
Thunder Bay, Ont.	48,891	694.1	72.3		49,673	777.1	90.1		47,090	806.4	131.1	
Toronto, Ont.	1,043,367	14,796.1	2,017.4		1,036,004	15,910.4	1,884.3		941,635	15,800.7	2,682.9	
Trois-Rivières, Que.	18,922	6,258.6	29.0		20,069	292.3	25.6		20,812	331.0	28.2	
Vancouver, BC	514,913	6,996.4	923.6		465,432	7,331.2	869.8		482,838	8,204.4	1,416.9	
Victoria, BC	108,393	1,407.2	166.9		99,145	1,513.1	163.8		103,251	1,670.7	216.7	
Windsor, Ont.	96,076	1,401.2	180.1		96,425	1,534.3	178.9		94,053	1,675.0	291.7	
Winnipeg, Man.	276,436	3,238.6	367.6		234,495	3,322.0	345.5		229,731	3,553.3	582.5	

22.18 Individual income tax statistics, by income class, 1976, 1977 and 1978

Income and class based on total income	Taxpayers			Total income assessed			Federal tax payable			Average federal tax		
	1976	1977	1978	1976 \$ '000	1977 \$ '000	1978 \$ '000	1976 \$ '000	1977 \$ '000	1978 \$ '000	1976 \$	1977 \$	1978 \$
Under \$2,000	7,851	2,132	2,515	7,875	1,580	1,490	27	14	50	3	7	20
\$2,000 and under \$3,000	76,623	27,400	19,006	202,839	74,317	53,124	215	118	33	3	4	2
" " \$3,000	540,988	295,207	131,077	2,305,598	1,300,234	542,382	26,404	10,170	489	49	35	4
\$3,000 " \$5,000	1,124,700	934,486	696,187	6,801,858	5,663,446	4,275,870	277,466	180,752	73,242	247	193	105
\$5,000 " \$7,000	1,889,946	1,782,053	1,620,393	15,998,873	15,175,045	13,872,589	1,109,012	867,468	612,593	587	487	378
\$7,000 " \$10,000	2,506,617	2,477,668	2,505,034	30,999,183	30,641,640	30,995,323	3,099,316	2,553,906	2,229,065	1,236	1,031	890
\$10,000 " \$15,000	2,072,813	2,493,959	2,792,342	38,658,477	46,972,495	53,110,062	5,014,661	5,257,538	5,575,803	2,419	2,108	1,997
\$15,000 " \$25,000	510,171	663,818	—	16,136,599	20,861,673	—	2,663,711	3,035,329	—	5,221	4,573	—
\$25,000 " \$50,000	77,022	87,995	988,131 ^a	6,186,134	7,034,811	36,790,544 ^a	1,617,362	1,352,477	5,571,195 ^a	20,999	17,302	5,638 ^a
\$50,000 and over	8,806,731	8,764,718	8,754,685	117,297,437	127,725,229	139,641,385	13,808,174	13,457,774	14,062,471	1,568	1,535	—
Total												

^aIncome range of \$25,000 and over.

22.19 Number of taxpayers and amounts of income and tax, by occupational class, 1976, 1977 and 1978

Occupational class	1976			1977			1978			Total income assessed \$'000	Federal tax payable \$'000	Taxpayers	Total income assessed \$'000	Federal tax payable \$'000	Taxpayers
	Taxpayers	Total income assessed \$'000	Federal tax payable \$'000	Taxpayers	Total income assessed \$'000	Federal tax payable \$'000	Taxpayers	Total income assessed \$'000	Federal tax payable \$'000						
Employees	7,544,416	99,020,796	11,560,655	7,517,168	108,284,248	11,384,764	7,422,421	116,139,426	11,764,637	116,139,426	11,764,637	7,422,421	116,139,426	11,764,637	7,422,421
Farmers	143,723	2,279,606	237,056	117,569	1,923,327	153,610	118,124	2,077,628	153,846	2,077,628	153,846	118,124	2,077,628	153,846	118,124
Fishermen	17,980	182,393	18,299	21,036	242,962	22,060	24,433	349,466	36,093	349,466	36,093	24,433	349,466	36,093	24,433
Self-employed professionals	7,634	279,527	57,048	7,305	275,696	49,379	7,519	295,159	49,391	295,159	49,391	7,519	295,159	49,391	7,519
Accountants	27,395	1,350,849	311,910	26,586	1,374,972	280,231	26,382	1,440,727	288,138	1,440,727	288,138	26,382	1,440,727	288,138	26,382
Medical doctors and surgeons	6,529	282,943	64,684	7,024	308,479	60,814	7,017	329,456	63,426	329,456	63,426	7,017	329,456	63,426	7,017
Dentists	12,718	570,510	135,056	13,442	592,765	116,718	13,422	595,388	112,078	595,388	112,078	13,422	595,388	112,078	13,422
Lawyers and notaries	2,969	120,618	27,138	3,103	113,392	20,850	3,087	113,392	20,850	113,392	20,850	3,087	113,392	20,850	3,087
Consulting engineers and architects	2,719	76,777	7,956	6,042	73,157	6,693	6,042	73,157	6,693	73,157	6,693	6,042	73,157	6,693	6,042
Entertainers and artists	18,910	361,325	56,765	19,520	389,644	53,048	21,926	399,881	53,048	399,881	53,048	21,926	399,881	53,048	21,926
Other professionals	23,821	375,557	48,184	20,339	340,714	38,849	21,278	416,737	38,849	416,737	38,849	21,278	416,737	38,849	21,278
Salesmen	284,947	3,897,898	457,155	274,146	4,029,781	405,941	302,167	7,218,339	405,941	7,218,339	405,941	302,167	7,218,339	405,941	302,167
Business proprietors	248,947	3,897,898	457,155	274,146	4,029,781	405,941	302,167	7,218,339	405,941	7,218,339	405,941	302,167	7,218,339	405,941	302,167
Investors	248,641	4,271,421	514,400	248,444	4,802,336	516,748	178,398	1,036,632	516,748	1,036,632	516,748	178,398	1,036,632	516,748	178,398
Property owners	47,720	819,976	113,215	48,568	918,404	127,914	47,938	1,036,632	127,914	1,036,632	127,914	47,938	1,036,632	127,914	47,938
Pensioners	179,972	1,901,269	119,146	178,398	2,154,546	137,914	198,434	2,629,907	137,914	2,629,907	137,914	198,434	2,629,907	137,914	198,434
All others	232,637	1,505,972	79,507	256,028	1,900,806	98,003	263,237	2,174,988	98,003	2,174,988	98,003	263,237	2,174,988	98,003	263,237
Total	8,806,731	117,297,437	13,808,174	8,764,718	127,725,229	13,457,774	8,754,685	139,641,385	14,062,471	139,641,385	14,062,471	8,754,685	139,641,385	14,062,471	8,754,685

22.20 Transfers by the federal government to provincial governments, territories and local governments, years ended Mar. 31, 1977 and 1978 (thousand dollars)

Year, payee and purpose	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	All provinces	YT	NWT	Canada
PROVINCIAL GOVERNMENTS AND TERRITORIES														
General purpose transfers	9,708	659	2,174	1,774	4,484	5,504	2,156	2,100	3,132	2,117	33,808	—	—	33,808
Stationary subsidies	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Federal corporation income tax on	2,317	310	—	—	2,022	4,708	1,373	44	25,535	2,190	38,499	130	72	38,701
privately owned public utilities	18,600	3,981	25,311	21,306	219,498	379,358	41,197	39,025	73,263	121,573	943,112	—	—	943,112
Tax revenue guarantee payments	223,211	59,942	283,387	211,366	1,189,510	—	171,433	-52,285	—	—	2,086,564	—	—	2,086,564
Equalization	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Grants in lieu of taxes	377	32	-139	-39	459	—	—	114	3,798	2,080	4,527	221	193	4,941
Other	—	—	—	—	—	2,812	1,162	—	—	—	10,656	31,771	165,335	207,762
Total, general purpose transfers	254,213	65,231	310,733	237,805	1,415,973	392,382	217,321	-11,002	105,728	128,782	3,117,166	32,122	165,600	3,314,888
Specific purpose transfers														
General government	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other	—	34	59	—	343	310	32	—	3	—	781	9	—	790
Protection of persons and property	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other	238	96	578	476	3,777	5,190	805	858	1,292	1,823	15,133	40	160	15,333
Transportation and communications	418	89	109	—	9,975	6,872	15,653	10,139	32,061	57,667	132,983	—	—	132,983
Roads	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Railway Grade Crossing Fund	418	89	—	—	6,445	5,458	289	18	1,001	1,491	15,209	—	—	15,209
Other	—	—	94	—	2,757	335	15,364	10,075	30,598	1,401	60,624	—	—	60,624
Rail	—	—	15	—	—	950	—	—	36	54,573	55,594	—	—	55,594
Water	—	—	—	—	750	—	—	—	—	—	750	—	—	750
Other	—	—	—	—	23	129	—	46	406	202	806	—	—	806
Health	67,335	12,509	98,199	81,659	-16,067	1,019,924	124,396	109,448	219,612	290,226	2,007,241	3,785	7,043	2,018,069
Hospital care	67,335	12,509	98,199	81,659	-16,067	1,019,924	124,396	109,448	219,612	290,226	2,007,241	2,327	4,840	2,014,408
Hospital insurance and diagnostic services	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hospital care	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Medical care	25,213	5,178	36,342	33,798	274,753	366,101	45,849	44,028	82,336	111,452	1,025,050	1,458	2,203	1,028,097
Health Resources Fund	1,065	—	749	4,052	4,358	6,138	807	2,146	4,735	4,735	24,050	1,034	2,013	24,050
Medical Care Act	24,148	5,178	35,593	29,746	270,395	359,963	45,042	41,882	82,336	106,717	1,001,000	931	1,652	1,003,583
Medicare — Indian and Inuit	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Preventive services	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other	—	—	20	—	—	—	40	17	19	—	96	103	361	464
Professional training	65	18	85	73	627	782	111	101	179	142	2,183	—	7	2,190
Total, health	92,613	17,705	134,646	115,530	259,313	1,386,807	170,396	153,594	302,146	401,820	3,034,570	4,819	9,063	3,048,452
Social welfare														
Assistance to disabled, handicapped, unemployed and other needy individuals	40,837	10,815	48,376	68,739	391,569	459,977	68,624	65,733	121,899	185,376	1,461,945	907	4,294	1,467,146
Old age assistance	4	—	—	—	—	10	—	—	—	—	—	—	—	—
Disabled persons allowances	374	123	1,340	1,458	50	51,318	15,470	2,209	14,665	675	87,691	115	35	87,841
Blind persons allowances	120	24	207	13	39	4	23	12	74	—	568	—	—	568
Canada Assistance Plan	40,347	10,668	46,820	67,266	391,433	408,665	53,131	63,512	107,160	184,701	1,373,703	792	4,255	1,378,754
Other	1,255	46	821	695	1,503	24,710	7,044	13	4,056	—	40,143	4	4	40,147
Total, social welfare	42,092	10,861	49,197	69,434	393,072	484,687	75,668	65,746	125,955	185,376	1,502,088	907	4,298	1,507,293
Education	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Indian and Inuit schools	—	—	—	—	—	—	—	—	—	2,435	2,435	—	—	2,435

22.20 Transfers by the federal government to provincial governments, territories and local governments, years ended Mar. 31, 1977 and 1978 (thousand dollars)
(continued)

Year, payee and purpose	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	All provinces	YT	NWT	Canada
1977 (continued)														
PROVINCIAL GOVERNMENTS AND TERRITORIES														
Specific purpose transfers (concluded)														
Education (concluded)														
Post-secondary	6,732	1,492	21,255	8,738	348,832	189,859	19,477	14,966	39,003	11,536	661,890	—	—	661,890
Post-secondary education	6,732	1,492	21,255	8,738	335,642	189,859	19,477	14,966	39,003	11,536	648,700	—	—	648,700
Canada Student Loans Act	—	—	—	—	13,190	—	—	—	—	—	13,190	—	—	13,190
Other	1,120	555	2,395	14,396	93,745	39,787	3,335	1,170	3,398	2,920	162,821	72	41	162,934
Total, education	7,852	2,047	23,650	23,134	442,577	229,646	22,812	16,136	42,401	16,891	827,146	72	41	827,259
Natural resources														
Fish and game	—	—	—	—	—	—	463	—	—	—	463	—	—	463
Mines	251	—	—	252	—	—	—	276	—	—	779	—	—	779
Oil and gas	—	—	—	88	—	1,504	44	731	—	6,427	8,795	35	—	35
Water power	—	4,592	29,611	437	—	—	181	—	4,000	—	38,821	—	—	38,821
Other	—	—	—	777	—	1,504	688	1,007	4,000	6,427	48,858	35	—	48,893
Total, natural resources	251	4,592	29,611	777	—	1,504	688	1,007	4,000	6,427	48,858	35	—	48,893
Agriculture, trade and industry, and tourism														
Agriculture	3,364	34,575	1,164	5,074	10,625	13,075	12,544	30,610	20,305	4,888	136,224	—	—	136,224
Agricultural and Rural Development Act	1,545	—	1,051	—	1,856	7,009	2,752	5,902	3,353	3,550	27,018	—	—	27,018
Land surveying and mapping	1,807	—	—	—	—	—	—	—	—	—	1,807	—	—	1,807
Rural area development	—	34,153	—	5,023	6,301	—	1,863	—	—	—	47,340	—	—	47,340
Rabies control	—	—	—	—	4	75	3	2	—	—	84	—	—	84
Crop insurance	—	—	—	51	2,464	5,838	5,271	24,400	16,548	1,338	56,457	—	—	56,457
Assistance re crop losses due to adverse weather	12	422	113	—	—	—	—	—	—	—	—	—	—	—
Research	—	—	—	—	—	102	2,539	—	—	—	2,641	—	—	2,641
Waterfowl crop depredation	—	—	—	—	—	51	—	—	404	—	51	—	—	51
Trade and industry	44,810	—	31,796	34,258	42,733	9,971	116	306	306	826	826	—	—	826
Tourism	—	—	—	—	—	—	13,025	12,109	4,405	3,484	196,591	—	2,709	199,300
Total, agriculture, trade and industry, and tourism	48,174	34,575	32,960	39,332	53,358	23,046	26,769	42,719	24,710	8,372	334,015	—	2,709	336,724
Environment														
Other	—	—	10	—	—	—	—	135	54	—	199	—	—	199
Recreation and culture	—	—	—	—	—	—	—	89	—	—	89	—	—	89
Other	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Labour, employment and immigration	1,501	152	3,995	471	198	25,746	1,557	30	—	558	34,208	—	—	34,208
Labour and employment	—	—	25	—	612	2,253	144	6	485	598	4,123	—	—	4,123
Immigration	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total, labour, employment and immigration	1,501	152	4,020	471	810	27,999	1,701	36	485	1,156	38,331	—	—	38,331
Housing														
General assistance	171	—	—	—	—	—	—	—	—	—	171	178	—	349
Supervision and development of regions and localities	1,243	2	2,354	2,444	4,741	—	106	—	—	—	10,890	—	—	10,890
Total, specific purpose transfers	194,553	70,153	277,194	251,598	1,167,967	2,166,061	314,630	290,459	533,107	679,532	5,945,254	6,060	16,271	5,967,585
Total, transfers to provincial governments and territories	448,766	135,384	587,927	489,403	2,583,940	2,558,443	531,951	279,457	638,835	808,314	9,062,420	38,182	181,871	9,282,473

22.20 Transfers by the federal government to provincial governments, territories and local governments, years ended Mar. 31, 1977 and 1978 (thousand dollars)
(continued)

Year, payee and purpose	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	All provinces	YT	NWT	Canada
1978 (continued)														
PROVINCIAL GOVERNMENTS AND TERRITORIES														
Specific purpose transfers (concluded)														
Transportation and communications	—	433	5,211	851	11,891	856	14,589	10,756	25,669	40,095	110,351	—	—	110,351
Railway	—	—	—	—	2,821	161	—	—	—	1,333	5,384	—	—	5,384
Railway Grade Crossing Fund	—	428	5,175	851	7,820	—	14,589	10,744	24,548	3,599	67,754	—	—	67,754
Other	—	—	30	—	—	647	—	—	25	27,147	27,849	—	—	27,849
Rail	—	—	—	—	1,250	—	—	—	—	8,000	9,250	—	—	9,250
Water	—	—	—	—	—	—	—	12	38	16	114	—	—	114
Other	—	—	—	—	—	48	—	—	—	—	—	—	—	—
Health	43,255	8,172	66,774	49,738	471,467	654,127	84,071	70,478	144,189	161,710	1,753,981	1,616	7,042	1,762,639
Hospital care	43,255	8,172	66,774	49,738	471,467	654,127	84,071	70,478	144,189	161,710	1,753,981	1,466	3,651	1,759,098
Hospital insurance and diagnostic services	—	—	—	—	—	—	—	—	—	—	—	150	—	3,391
Hospital care	26,563	5,370	40,983	31,835	273,826	405,540	50,301	46,757	90,432	111,443	1,083,050	1,129	2,338	1,086,517
Medical care	71	—	—	—	8,140	8,792	—	2,439	—	2,045	22,199	—	—	22,119
Health Resources Fund	26,492	5,370	40,422	31,764	265,686	396,748	50,301	44,318	90,432	109,398	1,060,931	1,019	2,222	1,064,172
Medical Care Act	—	—	—	—	—	—	—	—	—	—	—	110	—	116
Medicare — Indian and Inuit	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Preventive services	—	—	—	1	—	—	—	—	6	—	—	7	—	7
Other	67	22	86	78	635	820	112	105	174	197	2,296	—	7	2,303
Professional training	69,885	13,564	107,843	81,652	745,928	1,060,487	134,484	117,340	234,801	273,350	2,839,334	2,745	9,387	2,851,466
Total, health														
Social welfare	40,478	7,536	49,436	51,949	365,370	421,202	56,646	58,236	119,023	199,368	1,369,244	925	4,985	1,375,154
Assistance to disabled, handicapped, unemployed and other needy individuals	—29	—	—	—	—1	—35	—1	—	—	—1	—68	—	—	—68
Old age assistance	398	136	1,610	855	35	11,432	2,179	2,418	3,120	480	22,663	—	39	22,702
Disabled persons allowances	73	19	188	7	72	3	17	8	56	—	443	—	—	443
Blind persons allowances	40,036	7,381	47,638	51,087	365,264	409,802	54,451	55,810	115,848	198,889	1,346,206	925	4,946	1,352,077
Canada Assistance Plan	4,530	53	348	811	1,353	27,312	15,154	3,163	7,536	2,210	62,470	1,126	406	64,002
Other	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total, social welfare	45,008	7,589	49,784	52,760	366,723	448,514	71,800	61,399	126,559	201,578	1,431,714	2,051	5,391	1,439,156
Education	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Indian and Inuit schools	26,673	5,400	41,712	34,018	323,897	385,984	56,172	45,694	60,772	127,632	1,107,954	951	2,076	1,110,981
Post-secondary education	26,673	5,400	41,712	34,018	311,455	385,984	56,172	45,694	60,772	127,632	1,095,512	951	2,076	1,098,539
Canada Student Loans Act	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other	1,458	610	2,739	13,554	143,713	47,881	3,806	1,348	3,159	4,092	222,360	86	70	222,516
Total, education	28,131	6,010	44,451	47,572	467,610	433,865	59,978	47,042	63,931	135,597	1,334,187	1,037	2,146	1,337,170
Natural resources	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mines	—	—	—	—	—	—	760	316	—	—	1,076	—	—	1,076
Oil and gas	—	—	166	—	—	1,225	—	652	846	6,250	21,163	50	—	21,163
Water power	—	—	357	—	9,924	—	228	—	10,000	—	11,442	—	—	11,442
Other	500	—	—	357	—	—	—	—	—	—	—	—	—	—
Total, natural resources	500	—	523	357	9,924	1,225	3,088	968	10,846	6,250	33,681	50	—	33,731

22.20 Transfers by the federal government to provincial governments, territories and local governments, years ended Mar. 31, 1977 and 1978 (thousand dollars)
(continued)

Year, payee and purpose	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	All provinces	YT	NWT	Canada
1978 (continued)														
PROVINCIAL GOVERNMENTS AND TERRITORIES														
Specific purpose transfers (continued)														
Agriculture, trade and industry, and tourism														
Agriculture	2,954	30,246	116	693	7,451	13,620	11,621	40,207	19,548	5,135	131,591	—	—	131,591
Agricultural and Rural Development Act	2,335	—	—	—	4	6,065	2,524	3,387	1,912	3,806	20,033	—	—	20,033
Land surveying and mapping	609	—	—	—	—	—	—	—	—	—	609	—	—	609
Rural area development	—	29,782	—	648	5,163	—	410	—	—	—	36,003	—	—	36,003
Rabies control	—	—	—	—	1	61	2	—	—	—	65	—	—	65
Crop insurance	10	464	116	44	2,283	7,039	8,455	36,245	16,827	1,329	72,812	—	—	72,812
Assistance re crop losses due to adverse weather	—	—	—	—	—	240	—	114	—	—	354	—	—	354
Research	—	—	—	—	—	215	—	—	—	—	215	—	—	215
Waterfowl crop depredation	—	—	—	—	—	—	230	461	809	—	1,500	—	—	1,500
Trade and industry	55,469	—	34,270	43,375	117,639	10,987	14,643	9,366	5,548	7,392	298,689	—	890	299,579
Tourism	—	—	—	—	—	—	205	—	—	—	205	20	—	225
Total, agriculture, trade and industry, and tourism	58,423	30,246	34,386	44,068	125,090	24,607	26,469	49,573	25,096	12,527	430,485	20	890	431,395
Environment	—	—	—	244	244	643	61	46	—	580	1,798	—	183	1,981
Recreation and culture	600	—	—	—	—	—	150	104	—	—	854	60	—	914
Culture	600	—	—	—	—	—	150	—	—	—	750	60	—	810
Other	—	—	—	—	—	—	—	104	—	—	104	—	—	104
Labour, employment and immigration	614	147	—	12	—	251	6,433	—	71	—	7,457	—	—	7,457
Labour and employment	—	—	16	—	339	1,671	—	29	—	835	2,961	—	—	2,961
Immigration	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total, labour, employment and immigration	614	147	16	12	339	1,922	6,433	29	71	835	10,418	—	—	10,418
Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General assistance	—	—	—	—	—	—	—	—	—	—	—	193	—	193
Supervision and development of regions and localities	—	2	1,598	862	1,384	—	37	105	162	—	4,150	—	—	4,150
Total, specific purpose transfers	203,452	58,100	244,642	229,410	1,734,821	1,979,898	318,178	288,456	489,069	673,339	6,219,365	6,230	18,240	6,243,835
Total transfers to provincial governments and territories	493,675	126,694	638,321	520,642	3,126,178	2,232,127	566,945	316,297	592,519	738,743	9,352,141	47,771	201,804	9,602,716
LOCAL GOVERNMENTS														
General purpose transfers	1,042	—	7,153	—	25,331	54,231	7,929	3,056	7,007	11,561	117,310	351	675	118,336
Grants in lieu of taxes	368	—	162	407	3,298	13,378	965	629	1,399	2,777	23,383	170	987	24,540
Specific purpose transfers	368	—	124	407	2,179	1,953	888	594	431	1,473	8,417	170	987	9,574
Transportation and communications	—	—	—	—	127	4,942	25	14	64	392	5,564	—	—	5,564
Air	—	—	—	—	919	6,422	61	21	904	800	9,066	—	—	9,066
Road	—	—	—	—	73	61	52	—	—	112	336	—	—	336
Rail	—	—	38	—	—	—	—	—	—	—	—	—	—	—
Other	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Social welfare	3,276	—	4,496	—	19,911	5,123	556	304	31	—	33,697	—	—	33,697
Assistance to disabled, handicapped, unemployed and other needy individuals	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other	3,276	—	4,496	—	19,911	5,113	556	274	—	—	33,626	—	—	33,626
	—	—	—	—	—	10	—	30	31	—	71	—	—	71

22.21 Conditional grants and shared-cost programs as at Mar. 31, 1977 and 1978

Department and project	Provinces participating ^a		Federal contribution	
	1977	1978	1977 \$ '000	1978 \$ '000
AGRICULTURE				
Crop insurance	10	10	56,457	72,812
4-H Club assistance	10	10	181	185
Freight on livestock shipments to and from the Royal Agricultural Winter Fair, Toronto	8(PEI, Ont.)	5(Nfld., PEI, NS, Que., Ont.)	114	64
Crop loss assistance	Ont., Man.	Ont., Sask.	2,641	354
Contributions for rabies	Que., Ont., Man., Sask.	NB, Que., Ont., Man.	84	65
Aid to universities — veterinary teaching	Ont.	Ont.	51	215
EMPLOYMENT AND IMMIGRATION				
Agricultural manpower	9(Nfld.)	9(Nfld.)	3,438	3,879
Manpower training research	PEI, NB, Ont., Sask.	PEI, Que., Ont., Sask.	31	54
Co-operative education	—	Nfld., NS, NB, Ont., BC	—	198
ENERGY, MINES AND RESOURCES				
Aeromagnetic surveys	Que., BC + NWT	Que., BC + NWT	1,175 ^r	1,292
BC — YT — NWT boundary and Sask.	BC	—	42	—
Mineral development programs	Sask., Man.	Sask., Man.	276	1,075
Alberta iron processing and Peace River iron ore programs	Alta.	—	42	—
Assistance to provinces for energy substitution and conservation programs	PEI, NS	—	—	—
Bay of Fundy tidal power study	NS, NB	NS, NB	33,765	—
Energy and energy-related research fund	Alta.	—	824	724
Non-renewable resource evaluation	Man.	Man.	4,000	—
Uranium reconnaissance program	NB, Ont., Man., Sask., BC	Nfld., Ont., Man., Sask., BC	182	228
Assessment of potential hydroelectric resources in Labrador	—	Nfld.	792 ^r	865
Maritime Energy Corporation studies	—	NB	—	500
Wood gasification to generate electricity	—	NB	—	118
and fuel gas	—	Sask.	—	155
ENVIRONMENT				
Metropolitan Toronto and Upper Thames	Ont.	Ont.	6	2
Migratory birds crop depredation	Man., Sask., Alta.	Man., Sask., Alta.	826	1,501
Shore damage to property on Great Lakes	Ont.	Ont.	50	51
Industrial development	8(Sask., Alta.)	5(Que., Ont., Sask., Alta., BC)	652	324
Fraser River flood control	BC	BC	6,393 ^r	5,809
Environmental assessment	Que.	Que.	493	375
Delta project — Manitoba	Man.	—	463	—
Alberta oil sands environment research program	Alta., Ont.	Alta., Ont.	877	877
Flood risk mapping agreement	NB, Que., Ont., Man.	NB, Que., Ont., Man., Sask. + NWT	846 ^r	1,297
Forest engineering research institute of Canada	Que.	Que.	1,000	1,000
Montreal area flooding	Que.	Que.	514	1,522
Okanagan basin riparianization	BC	BC	71	441
Prairie provinces water board	Man., Sask., Alta.	Man., Sask., Alta.	72	78
Que. Appelle valley agreement	NB	—	200	—
Solid waste disposal and management	Sask.	Sask.	731	601
Souris River study	NS, Ont.	—	35	—
Southwestern Ontario dyking	Man., Sask.	Man., Sask.	176	91
St. Lawrence water quality studies	Ont.	Ont.	1,454	1,225
Feasibility study of reclaiming marketable waste paper	Que.	Que.	434	403
Environmental Contaminants Act	Ont.	—	13	—
Feasibility study of hazardous waste	—	Ont.	—	137
Newfoundland gear loss program	—	Man., Sask., Alta.	—	48
Shubenacadie agreement	NS	Nfld.	—	687
Waste heat recovery program	—	NS	218	166
	—	Ont.	—	2

22.21 Conditional grants and shared-cost programs as at Mar. 31, 1977 and 1978 (continued)

Department and project	Provinces participating ¹		Federal contribution	
	1977	1978	1977 \$ '000	1978 \$ '000
INDIAN AFFAIRS AND NORTH-REDIVER OPMINI				
Community development on and off reserve	Nfld., Ont.	Nfld.	4,550 ^a	4,800
Child care agreement	Man., Sask. + YT	Man., Sask. + YT	408 ^a	378
Maintenance of highway — Rocky Harbour to St. Pauls	Nfld.	Nfld.	213	141
Forest fire protection agreements	Sask.		85 ^a	—
Registered trapline fur agreement	Man.		440	—
Roads on and to reserves	Ont., Man., Sask.	Ont., Man., Sask.	374 ^a	533
Natural resources agreements	Ont.	Ont.	312	200
Purchase of land	Nfld., NB, BC	Nfld., NB, Ont., BC	2,311	1,744
Agricultural representative agreement	Sask.	Sask.	130	14
Development services wildlife agreement	Man.	Man.	398	333
King's County water sewage system	NB	NS	20	125
Indian military compound	Que.		163	—
High-level fixed highway bridge across Chathamby canal	Ont.		588	916
Indian police agreements	PEI, BC	PEI, BC	728 ^a	421
Maintenance of national historic parks	Sask.	Sask.	89	215
Qu'Appelle corridor recreation and tourism planning		Ont.	128	—
Victoria Hall at Choboung		Ont.	—	5
Vocation and technical training			—	—
Ministry of Natural Resources			—	—
Mercury testing program			—	—
INDUSTRY, TRADE AND COMMERCE				
Tourism	10 + YT and NW1	10 + YT and NW1	1,525	912
Metric	Sask., BC	PEI, NB, Sask., BC	73	161
JUSTICE				
All programs included	10 + YT and NW1	10 + YT and NW1	13,487	19,611
NATIONAL DEFENCE				
Contributions to provinces and municipalities for civil defence purposes	10 + YT and NW1	10 + YT and NW1	1,500	1,604
NATIONAL HEALTH AND WELFARE				
Health care programs				
Health Resources Fund Act	8(PEI, Alta.)	7(PEI, Man., Alta.)	24,080	22,119
Training of health personnel	10 + NW1	10 + NW1	2,190	2,403
Medical Care Act	10 + YT and NW1	10 + YT and NW1	1,003,883	23,890
Hospital Insurance and Diagnostic Services Act	10 + YT and NW1	6(PEI, NB, Sask., BC) + NWT	2,734,191 ^a	127,394 ^a
Income security and social assistance programs				
Old age security	Nfld., Que., Ont.	6(PEI, NS, NB, Sask.)	17Cr. ^a	68Cr. ^a
Blind Persons Allowance	9(BC)	9(BC)	621 ^a	483 ^a
Disabled Persons Allowance	9(BC)	9(BC)	607 ^a	428 ^a
Guaranteed income and experimental projects	Man.	Man.	3,120	3,570
Unemployment assistance	Que., Alta.	Que., Alta.	17 ^a	—
Canada Assistance Plan	10 + YT and NWT	10 + YT and NWT	1,595,932 ^a	1,541,718 ^a
Services to young offenders	NB, Ont.	NB, Ont.	15,797	16,829
Nursing home care	Ont., Man., Alta.	Ont., Alta.	63,661	14,513
National welfare grants	Ont., Sask., NWT	NS, Ont.	31	7
Vocational rehabilitation of disabled persons	9(Que.) + YT and NWT	9(Que.) + NWT	23,560	22,245
PUBLIC WORKS				
Maintenance cost of Perley Bridge — agreement that federal government pay 75%, Ontario 25%. Maintenance cost of Macdonald-Cartier Bridge — agreement that federal government pay 33 1/3%, Ontario 33 1/3%, Quebec 33 1/3%.			85	327
	Que., Ont., Man.	Que., Ont., Man.		

22.21 Conditional grants and shared-cost programs as at Mar. 31, 1977 and 1978 (concluded)

Department and project	Provinces participating ¹		Federal contribution	
	1977	1978	1977 \$'000	1978 \$'000
REGIONAL ECONOMIC EXPANSION				
Comprehensive rural development plans				
Agricultural and Rural Development (ARDA)				
Special areas and special highways agreements				
General development agreements				
Federal-provincial research programs				
	10	10	281,228*	359,356*
SECRETARY OF STATE				
Post-secondary education — 1977 act	—	10 + YT and NWT	—	1,050,240
Post-secondary education — 1972 act	10	10	648,700	48,299
Language texts for citizenship classes	6(Nfld., PEI, NB, BC)	Ont., Sask., Alta.	193	131
Bilingualism in education	10 + YT and NWT	10 + YT and NWT	162,934	222,516
Citizenship and language instruction for immigrants	7(Nfld., PEI, NB)	6(Nfld., PEI, NB, Man.)	3,930	2,830
Bilingualism in public administration	4 + YT (Nfld., PEI, NB, Sask., Alta., BC)	5 + YT (Nfld., PEI, Sask., Alta., BC)	468	1,157
TRANSPORT				
Contributions to assist in extending the network of highways and road facilities in the northern part of the province	Man., Sask., Alta., BC	Man., Sask., Alta., BC	10,735	11,032
Contributions to assist in upgrading, strengthening and improving the primary highway network	Man., Sask., Alta.	7(Que., Ont., BC)	26,702	34,899
Contributions in the construction and operation of certain rail lines	BC	BC	54,000	27,000
National Harbours Board	—	NS	—	40
URBAN AFFAIRS				
National Capital Commission	Que., Ont.	Que., Ont.	6,130	9,704

¹Provinces not participating in parentheses.²Includes the contribution to Quebec under the Established Programs (Interim Arrangements) Act, which may have taken the form of a tax abatement and an operating cost adjustment payment or recovery.³Cr. indicates a recovery.⁴Excludes amounts of \$6,548 for 1977 and \$6,542 for 1978, which were not allocated by province.

22.22 Gross general revenue and expenditure of provincial and territorial governments, years ended Mar. 31, 1976 and 1977 (thousand dollars) (concluded)

Year, source or function	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT	NWT	Canada
1977 (concluded)													
Gross general revenue by source (concluded)													
Non-tax revenue from own sources	85,177	19,452	110,466	65,412	985,722	1,103,390	152,968	211,221	526,221	539,432	6,365	13,332	3,819,159
General purpose transfers from other levels of government	255,543	60,548	309,193	237,106	1,245,139	508,537	217,026	36,922	105,748	127,960	20,861	124,335	3,248,919
Specific purpose transfers from other levels of government	192,192	59,295	248,141	245,027	1,211,246	2,150,213	319,413	302,923	509,371	639,943	33,271	58,930	5,969,967
Total	933,903	211,747	1,208,749	1,030,654	11,139,824	11,715,617	1,557,805	1,626,772	4,658,680	4,100,812	74,021	208,886	38,467,469
Gross general expenditure by function													
General government	38,176	12,865	52,046	44,572	536,041	648,212	96,494	115,228	333,736	323,575	10,494	76,841	2,288,279
Protection of persons and property	29,567	5,072	39,185	32,625	435,594	500,451	66,757	63,893	136,032	130,528	3,871	5,591	1,482,167
Transportation and communications	107,696	20,307	110,007	123,880	887,986	872,212	86,334	147,575	261,116	346,904	15,433	2,896	2,582,345
Health	196,132	38,730	303,496	232,125	2,741,388	3,439,234	431,116	347,535	936,224	1,043,970	9,595	19,551	6,736,344
Social welfare	107,247	21,232	115,357	146,620	1,872,374	1,841,378	260,929	225,921	358,417	614,413	7,421	9,476	5,180,983
Education	264,293	57,566	305,815	301,650	3,122,601	2,918,936	311,117	321,062	783,517	683,515	12,160	36,714	9,100,048
Natural resources	34,997	2,946	20,121	30,250	165,770	167,566	33,790	63,033	377,427	123,162	750	3,064	1,022,875
Agriculture, trade and industry, and tourism	32,705	17,830	44,622	50,200	270,614	164,499	69,141	116,313	143,187	94,626	1,159	7,538	1,012,435
Housing	651	—	8,008	6,115	98,490	155,013	92	25,217	169,682	210	—	—	463,409
Debt charges	122,589	13,363	99,440	70,628	580,895	1,030,299	132,825	80,706	153,511	89,729	913	1,137	2,376,037
General purpose transfers to other levels of government	8,661	2,085	47,394	36,540	361,709	454,338	17,513	12,295	57,338	68,903	—	—	1,066,775
All other expenditures	130,595	20,047	91,580	41,573	397,847	548,965	110,335	81,699	150,448	250,607	7,318	42,473	1,873,488
Total	1,073,308	212,041	1,237,071	1,116,778	11,471,309	12,741,103	1,616,442	1,575,282	3,716,229	3,939,613	69,324	205,482	38,973,983

Year and source	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT	NWT	Canada
1976 ^f													
Revenue from own sources	54,716	8,149	189,092	64,671	2,094,195	3,616,142	471,795	348,452	822,328	1,169,788	4,454	10,370	8,854,152
Taxes	33,713	4,476	146,127	43,085	1,507,902	2,828,670	339,508	252,344	500,296	904,881	1,974	4,205	6,367,181
Real property	22,130	4,383	127,183	42,959	1,210,894	2,384,531	300,118	223,895	434,606	845,680	1,940	4,086	5,392,435
Special assessments	1,553	93	4,330	126	131,891	85,292	11,762	7,903	17,923	34,318	34	119	295,544
Personal property	13,571	...	...	...	...	...	...	...	...	...	...	...	13,571
Corporations and business	7,314	...	7,155	...	117,472	347,925	19,417	15,000	47,767	24,307	...	...	586,357
Other	2,716	...	3,258	...	47,645	10,922	8,211	6,146	27,376	79,274	...	...	79,274
Grants in lieu of taxes	3,430	...	15,845	...	100,924	127,904	38,873	9,596	17,736	17,856	803	1,312	344,279
Federal government	1,160	...	6,421	...	28,373	46,764	8,226	1,837	6,407	17,552	296	665	105,891
Federal government enterprises	365	...	3,422	...	6,280	6,481	1,361	524	337	1,629	58	1	20,458
Provincial governments	1,145	...	1,145	...	11,070	14,696	17,488	760	10,110	3,162	449	646	59,599
Provincial government enterprises	246	...	4,731	...	13,393	48,520	6,639	4,912	4,129	6,987	...	...	89,557
Local government enterprises	...	...	...	...	...	...	...	1,146	6,527	19,116	...	...	19,116
Non-government organizations	1,593	...	126	...	41,808	...	5,159	417	226	336	...	...	49,665
Sales of goods and services	8,674	2,315	15,979	16,581	316,998	386,240	46,060	50,805	177,426	129,423	1,223	1,577	1,153,301
Other	4,823	848	8,406	8,519	202,539	166,867	19,874	17,496	45,479	46,550	805	1,083	523,289
Rentals	3,851	1,467	7,573	8,062	114,459	219,373	26,186	33,309	131,947	82,873	418	494	630,081
Concessions and franchises	40	164	1,267	1,443	2,286	30,964	1,843	2,008	13,241	38,918	55	437	93,271
Licences and permits	532	37	1,113	1,025	11,182	10,086	375	3,499	12,448	38,918	312	331	33,814
Remittances from own enterprises	245	300	...	...	28,424	4,693	9,084	3,369	13,173	24,039	178	165	88,060
Interest	224	448	2,534	1,481	40,916	109,951	20,135	8,612	41,721	28,410	...	133	254,625
Interest and penalties on taxes	265	19	1,786	308	20,078	20,078	3,667	1,130	6,079	5,668	96	90	60,762
Fines	399	279	1,793	339	26,684	12,624	2,985	4,266	9,047	6,259	51	62	60,698
Miscellaneous	6,909	111	2,530	409	61,201	61,201	4,572	6,909	6,420	11,740	14	2,077	159,912
Transfers	51,555	43,354	308,105	70,574	2,372,519	3,132,636	306,679	351,274	860,087	690,822	3,467	10,165	8,201,227
General purpose	5,777	1,550	40,594	36,220	400,594	361,637	17,061	20,213	51,008	110,545	730	2,163	1,048,092
Provincial governments	5,777	1,550	40,594	36,220	400,594	361,637	17,061	20,213	51,008	110,545	730	2,163	1,048,092
Specific purpose	45,778	41,804	267,511	34,354	1,971,925	2,770,989	289,618	331,061	809,079	580,277	2,737	8,002	7,153,135
Federal government	21,063	4,118	4,363	19,222	52,756	70,260	8,153	6,270	19,254	50,738	498	3	256,696
Provincial governments	24,715	37,686	263,148	15,132	1,919,169	2,700,729	281,467	324,791	789,825	529,539	2,239	7,999	6,895,439
Total, general revenue	106,271	51,503	497,197	135,245	4,466,714	6,748,768	778,474	699,726	1,682,415	1,860,610	7,921	20,535	17,055,379
1977 ^p													
Revenue from own sources	57,867	8,460	209,411	72,362	2,224,787	3,928,083	493,867	416,222	939,082	1,271,862	5,208	11,974	9,639,185
Taxes	37,362	5,009	157,936	48,943	1,632,250	3,163,250	360,165	294,501	589,693	991,805	2,537	4,968	7,288,455
Real property	26,532	4,923	140,013	48,812	1,320,468	2,612,783	319,921	260,378	505,613	937,329	2,176	4,831	6,173,779
Special assessments	943	86	4,889	131	141,032	104,027	13,155	11,467	21,449	37,528	361	137	335,205
Personal property	...	...	...	...	...	...	...	...	...	...	...	...	...
Corporations and business	8,022	...	9,141	...	126,616	434,719	21,071	17,561	62,631	26,314	...	...	706,075
Other	1,865	...	3,893	...	44,134	11,757	5,169	5,095	21,889	72,547	...	...	72,547
Grants in lieu of taxes	2,862	...	18,363	...	105,858	140,241	43,117	10,900	31,474	21,849	886	1,730	377,300
Federal government	1,001	...	8,835	...	26,937	53,091	7,422	2,033	7,941	6,395	319	872	113,882
Federal government enterprises	317	...	3,225	...	7,563	4,627	2,832	560	355	701	58	18	21,256
Provincial governments	34	...	784	...	17,095	5,796	5,796	867	12,106	3,558	509	840	66,980
Provincial government enterprises	302	...	4,776	...	17,297	56,753	12,358	5,345	3,248	110,780	...	...	110,780
Local government enterprises	...	...	...	...	12,999	8,675	1,497	1,514	3,693	8,113	...	...	38,391
Non-government organizations	1,208	...	743	...	13,212	5,591	3,025	1,261	3,025	1,261	...	...	36,391
Sales of goods and services	11,295	2,523	19,350	19,925	424,701	51,922	73,664	73,664	211,291	145,006	1,290	2,407	1,285,805
Other	4,817	9,747	10,701	9,747	182,260	209,528	56,435	20,365	49,643	880	1,696	1,696	567,763
Water	6,478	1,846	8,649	10,178	240,441	30,928	30,928	53,299	154,856	95,363	410	711	718,042

22.23 General revenue of local governments, fiscal years ended nearest Dec. 31, 1976-78 (thousand dollars) (concluded)

Year and source	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT	NWT	Canada
1977P (concluded)													
Rentals	787	175	1,302	1,192	614	32,733	2,909	2,855	14,842	43,117	121	397	101,044
Concessions and franchises	51	167	167	9	—	7,834	567	657	18,000	3,612	2	286	33,297
Licences and permits	739	50	1,255	868	17,229	33,149	5,060	4,177	20,204	21,773	162	198	104,664
Remittances from own enterprises	—	300	—	—	—	—	2,500	4,549	17,398	17,809	—	—	40,407
Interest	240	6	2,883	276	28,740	42,734	10,580	7,178	12,001	23,413	63	186	128,300
Interest and penalties on taxes	393	9	2,914	—	—	24,381	4,449	1,464	7,264	3,493	70	112	68,409
Fines	44	234	1,890	414	30,284	14,743	3,070	4,772	9,112	3,204	58	73	143,596
Miscellaneous	4,094	154	3,351	735	51,368	46,281	9,438	9,533	7,803	9,203	19	1,617	67,908
Transfers	39,698	45,565	339,161	69,778	2,690,601	3,277,648	289,873	370,375	983,477	648,821	4,028	14,973	8,773,997
General purpose	8,222	1,799	54,259	41,949	435,354	411,509	21,465	21,972	67,238	104,946	957	2,544	1,172,414
Provincial governments	8,222	1,799	54,259	41,949	435,354	411,509	21,465	21,972	67,238	104,946	957	2,544	1,172,414
Specific purpose	31,476	43,766	284,902	27,829	2,255,047	2,866,139	268,408	348,403	916,238	543,875	3,071	12,429	7,601,583
Federal government	17,311	3,052	8,104	31,112	46,779	2,130	6,617	14,344	29,273	532	97	174,438	174,438
Provincial governments	14,165	40,714	276,708	12,832	2,223,935	2,819,360	266,278	341,786	901,894	514,602	2,539	12,332	7,427,145
Total, general revenue	97,565	54,025	548,572	142,140	4,915,388	7,205,731	783,740	786,597	1,972,558	1,920,683	9,236	26,947	18,413,182
1978e													
Revenue from own sources	64,956	9,030	228,800	82,513	2,395,913	4,160,786	538,535	445,055	1,076,034	1,402,603	6,141	12,943	10,423,309
Taxes	42,736	5,426	174,986	56,745	1,764,572	3,339,632	393,692	312,863	679,846	1,085,458	3,265	5,362	7,874,583
Real property	30,751	5,336	155,280	56,610	1,415,078	2,766,972	313,962	275,648	582,395	1,025,954	2,916	5,211	6,673,258
Special assessments	1,068	90	5,770	135	166,300	106,837	13,967	12,590	26,228	40,603	349	151	374,083
Personal property	—	—	—	—	—	—	896	—	—	—	—	—	—
Corporations and business	8,935	—	9,927	—	135,077	453,974	22,102	19,093	71,223	28,121	—	—	748,452
Other	1,982	—	4,009	—	48,117	11,849	5,625	5,532	36,495	760	—	—	77,894
Grants in lieu of taxes	2,842	—	18,776	—	118,367	153,375	47,333	12,629	26,732	26,732	907	1,952	419,408
Federal government	1,123	—	8,729	—	29,464	57,877	8,042	2,149	8,294	6,747	318	991	123,734
Federal government enterprises	315	—	3,226	—	5,710	4,800	3,258	6,619	8,361	7,013	59	22	20,413
Provincial governments	35	—	797	—	26,549	19,868	6,322	1,047	14,189	7,026	530	939	77,302
Provincial government enterprises	199	—	5,119	—	20,226	61,423	13,540	6,409	5,561	9,476	—	—	121,953
Local government organizations	—	—	—	—	—	9,407	1,621	1,758	4,034	14	—	—	30,347
Non-government organizations	1,170	—	905	—	22,705	—	14,550	1,457	4,026	14	—	—	45,459
Sales of goods and services	12,836	2,673	21,117	22,209	347,168	454,736	55,077	79,618	234,373	158,338	1,410	2,581	1,391,896
Water	5,253	702	11,942	10,622	224,533	199,847	22,318	22,396	63,675	31,989	931	1,824	615,992
Other	7,583	1,971	9,175	11,587	122,635	254,889	32,759	57,222	170,658	106,359	479	757	775,904
Rentals	761	197	1,356	1,309	657	37,155	3,758	2,903	16,710	4,381	124	416	110,307
Concessions and franchises	56	—	168	10	8,479	8,479	4,422	3,227	21,643	3,981	2	325	38,318
Licences and permits	835	58	1,284	937	19,321	33,262	4,422	4,401	24,807	23,236	211	209	112,983
Remittances from own enterprises	—	250	—	—	14,294	—	8,900	5,533	22,058	26,025	66	181	53,109
Interest	255	6	2,810	265	20,943	44,319	9,392	8,359	12,865	26,025	84	111	125,486
Interest and penalties on taxes	401	9	2,772	441	17,003	27,424	4,187	1,540	8,144	3,200	66	111	69,875
Fines	54	245	1,956	441	32,957	16,582	3,228	5,114	10,024	9,544	56	78	74,279
Miscellaneous	4,180	166	3,575	597	60,631	45,822	8,699	8,868	9,109	9,674	16	1,728	153,065
Transfers	38,808	48,028	377,440	74,568	3,077,895	3,669,955	310,737	420,271	1,037,141	683,176	9,527	13,102	9,760,648
General purpose	8,642	2,003	63,681	48,148	461,652	439,755	20,017	36,213	66,910	115,662	962	2,671	1,266,316
Provincial governments	8,642	2,003	63,681	48,148	461,652	439,755	20,017	36,213	66,910	115,662	962	2,671	1,266,316
Specific purpose	30,166	46,025	313,759	26,420	2,616,243	3,230,200	290,720	384,058	970,231	567,514	8,565	10,431	8,494,332
Federal government	16,313	2,965	15,970	15,175	40,801	50,094	4,840	19,244	16,507	26,137	1,020	2	209,068
Provincial governments	13,853	43,060	297,789	11,245	2,575,442	3,180,106	285,880	364,814	953,724	541,377	7,545	10,429	8,285,264
Total, general revenue	103,764	57,058	606,240	157,081	5,473,808	7,830,741	849,272	865,326	2,113,175	2,085,779	15,668	26,045	20,183,957

22.24 General expenditure of local governments, fiscal years ended Dec. 31, 1976-78 (thousand dollars)

Year and function	Nfld. ¹	PEI	NS ¹	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT	NWT	Canada
1976 ²													
General government	9,873	1,187	17,244	9,978	315,230	284,501	29,253	37,162	63,555	72,766	864	2,811	844,424
Executive and legislative	451	202	1,762	669	12,477	18,987	3,836	2,253	3,914	4,596	53	153	49,353
Administrative	6,618	695	13,954	8,486	242,140	260,231	22,647	30,472	52,668	55,323	625	2,432	696,291
Other	2,804	290	1,528	823	60,613	5,283	2,770	4,437	6,973	12,847	186	226	98,780
Protection of persons and property	5,189	1,565	32,074	27,320	405,133	575,429	59,161	41,056	121,485	160,093	984	971	1,428,435
Police services	377	1,088	15,168	12,580	270,836	333,711	27,333	24,842	64,306	73,256	—	30	825,375
Courts of law and correctional services	—	—	4,099	—	8,078	573	104	423	333	3128	107	200	17,045
Fire-fighting services	3,792	453	11,169	12,852	114,700	189,497	21,823	13,281	43,001	65,830	722	493	477,613
Emergency measures	11	6	123	1,056	—	16,250	2,240	511	4,602	2,868	100	100	47,767
Regulatory services	170	11	845	609	—	34,542	55	1,222	2,454	11,117	93	92	51,210
Other	839	7	670	223	11,499	856	3,753	777	6,789	3,894	62	56	29,425
Transportation and communications	26,703	2,257	31,124	45,094	607,956	743,011	108,403	115,652	282,713	159,355	1,843	3,306	2,127,417
Common services	1,818	274	3,325	5,377	6,914	6,914	5,979	11,052	24,797	13,572	336	627	74,071
Road	1,983	276	3,833	491,724	491,724	729,693	101,663	102,128	256,946	142,901	1,438	2,406	1,921,206
Administration	20	49	1,229	490	44,962	22,815	6,935	12,000	2,815	6,690	30	—	28,953
Engineering	1,615	—	1,148	30,547	—	13,827	957	2,052	1,694	3,658	—	—	13,321
Roads and streets	18,519	1,130	18,743	282,542	282,542	555,966	73,725	72,301	213,985	111,921	924	2,023	1,382,726
Snow and ice removal	1,805	379	2,657	4,627	114,893	44,593	3,423	3,423	11,060	2,656	139	133	13,704
Bridges, subways, tunnels	—	—	404	1	9,538	4,148	2,362	5,925	8,051	8,894	155	—	96,819
Street lighting	1,616	315	2,417	2,153	29,692	27,561	5,350	3,836	8,460	8,963	115	141	60,874
Traffic services	458	92	777	515	9,053	31,860	2,839	1,896	7,538	5,578	6	12	28,428
Parking	37	18	106	300	1,024	21,664	885	695	2,897	1,700	—	97	19,540
Other	—	—	140	—	—	7,259	846	—	897	300	—	1	9,540
Public transit	815	—	178	840	112,025	5,436	120	—	970	892	69	227	115,159
Other	23,891	4,524	29,227	54,780	4,207	5,448	641	2,472	136,982	1,990	46	46	17,031
Environment	9,433	1,835	12,945	21,596	547,565	557,223	49,367	53,548	79,211	196,505	426	6,180	1,664,660
Water purification and supply	10,533	2,028	10,534	30,331	169,665	210,321	24,740	28,661	79,211	72,631	2,148	3,102	1,664,660
Garbage and waste collection and disposal	3,913	373	5,664	2,853	63,060	235,668	13,931	18,752	38,393	92,847	1,851	2,116	763,087
Other	12	288	84	—	—	99,083	10,304	7,792	18,490	30,743	254	546	265,184
Health	40	6	40,409	102	4,467	12,151	58,866	103,340	2,799	1,294	23	115	21,859
Preventive services	30	—	662	102	6,337	316,462	3,579	2,972	267,013	17,323	60	120	810,081
Medical care	—	—	—	—	6,337	68,636	—	—	—	13,330	55	30	98,335
Hospital care	—	6	37	—	—	—	39	—	2,592	2,537	—	3	4,495
Other	—	—	39,596	—	—	247,160	53,428	100,329	264,335	1,138	—	80	706,272
Social welfare	10	4	114	—	—	401,983	9,978	5,848	23,109	59,600	—	10	969
Administration	—	—	31,311	—	13,219	401,983	1,939	182	23,109	59,600	—	—	545,054
Assistance	—	4	15,694	—	13,219	181,899	7,691	1,042	14,617	52,726	—	—	36,321
Services	—	—	12,013	—	—	204,507	346	4,094	6,644	2,915	—	—	276,677
Other	—	—	998	—	—	277	326	326	1,281	1,459	—	—	227,713
Housing — general assistance	9,892	1,649	3,969	8,958	58,458	80,263	12,056	7,234	55,586	35,337	858	3,760	278,020
Environmental planning and zoning	11	160	1,453	778	15,165	38,374	1,337	4,368	11,688	11,688	68	—	74,312
Community development	9,654	1,442	1,471	7,629	33,037	3,868	9,867	5,864	50,332	22,489	755	3,571	184,069
Other	227	47	1,045	551	10,256	43,561	652	758	898	1,160	35	189	19,639
Natural resources	—	—	93	17	—	42,748	2,411	153	153	2,578	—	66	47,646
Agriculture, trade and industry, and tourism	—	—	1,312	1,507	6,921	30,742	4,171	809	18,959	1,429	20	49	92,919
Agriculture	—	—	—	—	—	30,092	—	748	5,717	—	—	—	36,562
Trade and industry	—	—	825	305	6,523	27,645	292	—	10,312	490	—	44	46,436
Regional development commissions	—	—	38	305	6,519	—	123	—	—	2	—	—	296
Industrial parks and commissions	—	—	787	305	—	27,645	169	—	10,310	361	—	44	46,140
Tourism	—	—	487	1,202	398	—	3,879	61	2,930	939	20	5	9,921

22.24 General expenditure of local governments, fiscal years ended nearest Dec. 31, 1976-78 (thousand dollars) (continued)

Year and function	Nfld. ¹	PEI	NS ¹	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT	NWT	Canada
1976 ¹ (continued)													
Recreation and culture	19,758	2,138	13,096	21,386	243,165	437,432	57,573	35,269	121,429	164,959	1,585	1,209	1,118,999
Recreational facilities	18,482	2,036	8,594	17,540	193,860	313,186	45,374	27,369	101,890	133,434	1,570	968	864,807
Cultural facilities	1,276	92	4,169	3,634	19,175	123,745	11,813	7,804	16,077	28,916	15	220	216,497
Other	—	10	333	212	2,120,048	3,010,331	326	96	3,462	2,609	—	21	37,700
Education — primary and secondary	6,220	34,410	297,518	17,069	608,988	535,277	352,992	307,664	685,167	977,792	—	4,340	7,796,482
Fiscal services	14,614	2,900	31,698	14,385	490,492	324,871	65,909	45,742	181,850	204,245	451	1,229	1,706,972
Debt charges	12,578	2,741	23,133	10,540	67,179	11,324	45,682	21,240	119,099	164,752	294	1,227	1,220,493
Interest on short-term borrowing	670	198	2,832	1,254	384,825	311,976	3,291	6,195	7,153	6,223	—	172	1,06,777
Interest on long-term debentures	11,372	2,307	18,016	10,286	384,825	311,976	3,291	6,195	7,153	6,223	—	172	1,06,777
Interest on other long-term borrowing	297	132	892	2,423	23,240	34	1,975	824	14,124	107,808	294	1,014	1,05,073
Other	239	104	1,393	168	15,248	1,537	969	97	2,791	2,231	—	31	32,849
Transfers to reserves and allowances	297	104	1,393	168	15,248	1,537	969	97	2,791	2,231	—	31	32,849
Transfers to own enterprises	693	159	6,890	2,684	24,096	132,495	11,800	21,159	42,153	38,673	157	31	280,964
Transfers to other enterprises	1,343	—	1,675	—	94,400	77,911	8,427	3,343	20,598	820	—	2	280,517
Other services	30	—	4,889	612	12,927	3,173	48	1,685	5,953	14,160	—	68	43,545
Total, general expenditure	116,210	50,640	533,964	186,823	4,945,947	7,045,127	808,793	755,009	1,963,954	2,066,142	10,933	24,112	18,507,654
1977 ²													
General government	8,790	1,188	19,673	10,038	325,557	291,036	43,932	32,838	75,983	89,372	1,084	3,020	902,511
Executive and legislative	784	137	2,057	1,128	12,444	21,549	2,548	2,384	4,619	5,163	74	187	53,074
Administrative	6,530	965	15,312	8,010	193,187	263,254	36,763	25,891	61,219	71,524	841	2,677	686,173
Other	1,476	86	2,304	900	119,926	6,233	4,621	4,563	10,145	12,685	169	156	163,264
Protection of persons and property	3,146	2,021	40,154	29,303	455,041	641,830	61,315	46,789	132,821	176,839	988	1,212	1,591,459
Police services	406	1,357	19,473	14,143	303,252	373,078	31,012	27,074	69,517	83,384	6	28	921,730
Courts of law and correctional services	—	—	5,386	—	12,546	196	63	1,009	295	4,554	124	78	24,501
Fire-fighting services	2,308	634	13,644	12,883	112,789	208,726	22,435	15,713	49,359	71,170	677	624	510,962
Emergency measures	—	5	185	1,247	—	16,925	2,867	1,101	2,058	2,082	1	92	26,562
Regulatory services	—	—	934	—	—	35,126	3,525	1,510	5,298	12,483	113	104	59,969
Other	220	20	934	389	26,454	7,779	1,413	382	6,294	3,166	67	36	46,737
Transportation and communications	20,214	2,560	51,088	48,974	649,692	929,559	98,310	127,012	318,297	170,733	2,142	4,427	2,423,008
Common services	1,202	105	5,866	6,288	—	23,283	10,976	7,589	18,681	16,718	108	323	91,139
Roads	18,802	2,455	45,108	41,898	544,849	893,386	86,097	119,070	299,321	151,350	1,996	3,817	2,208,149
Administration	250	50	1,577	540	45,289	43,169	4,775	2,098	3,788	4,676	56	61	106,329
Engineering	—	—	1,879	625	—	27,012	1,192	3,439	250,444	517,150	—	43	42,203
Roads and streets	14,457	1,515	34,262	31,815	317,629	607,698	57,764	100,953	230,444	117,150	1,484	3,055	1,538,226
Snow and ice removal	1,485	381	2,809	3,215	115,595	96,142	8,644	3,261	14,473	2,982	157	279	251,779
Bridges, subways, tunnels	2,20	90	63	63	12,320	3,398	4,089	1,907	4,075	1,619	121	121	57,703
Street lighting	2,106	385	3,367	2,448	34,653	32,823	5,624	4,735	12,052	10,210	131	204	108,738
Traffic services	107	89	897	683	14,009	3,222	2,785	1,740	9,068	7,126	161	49	66,936
Parking	161	35	114	417	5,354	19,911	527	769	2,352	1,768	8	—	31,420
Other	216	—	113	—	—	3,011	697	168	427	445	2	—	5,079
Public transit	—	—	693	—	100,039	604	—	78	295	929	23	263	102,366
Environment	210	—	114	95	4,804	12,286	1,237	78	295	1,736	38	264	21,354
Water purification and supply	22,302	3,503	42,295	46,547	577,254	567,373	45,833	48,272	151,823	187,326	4,625	8,581	1,705,734
Waste collection and disposal	10,455	1,810	17,761	25,968	214,249	231,664	19,444	22,386	71,882	65,677	1,924	6,246	689,466
Garbage	7,216	1,315	17,606	16,802	277,804	223,123	12,631	17,476	51,409	90,593	2,322	1,272	719,569
Garbage and waste collection and disposal	4,379	378	6,806	3,529	75,565	104,946	13,553	8,227	27,086	30,219	370	802	276,060
Other	52	—	122	248	9,636	7,640	205	183	1,446	837	9	261	20,639
Health	7	310	37,823	53	5,374	382,233	64,768	119,190	285,316	18,481	65	111	913,731
Preventive services	—	—	37,823	53	5,374	382,233	64,768	119,190	285,316	18,481	65	111	913,731
Medical care	7	310	461	28	5,374	115,376	1,690	3,234	1,503	14,257	29	29	142,259
Hospital care	—	—	461	28	5,374	115,376	1,690	3,234	1,503	14,257	29	29	142,259
Other	—	—	37,304	—	—	265,694	61,296	115,379	283,221	1,454	—	47	764,396
	—	—	30	—	—	1,163	68	60	591	7	—	35	1,954

22.24 General expenditure of local governments, fiscal years ended nearest Dec. 31, 1976-78 (thousand dollars) (continued)

Year and function	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT	NWT	Canada
1977P (concluded)													
Social welfare	—	—	37,820	—	21,499	429,218	10,463	5,480	24,948	31,468	—	—	560,896
Administration	—	—	2,954	—	21,499	16,936	2,166	230	1,946	—	—	—	45,861
Assistance	—	—	17,595	—	—	187,506	8,161	3,189	16,321	29,458	—	—	262,230
Services	—	—	14,668	—	—	222,771	134	2,039	6,541	—	—	—	247,363
Other	—	—	2,603	—	—	2,005	2	22	140	670	—	—	5,442
Housing — general assistance	11,753	1,030	12,833	8,932	63,124	77,731	6,437	7,564	18,934	55,975	581	1,216	266,110
Environmental planning and zoning	51	—	1,898	792	19,633	37,801	2,074	1,323	5,331	12,973	8	29	81,913
Community development	11,668	944	10,166	8,140	35,890	35,890	4,186	4,893	7,833	42,134	554	1,176	158,879
Other	85	35	769	—	12,196	4,040	177	1,348	5,770	868	19	11	25,318
Natural resources	—	—	153	113	—	54,312	2,557	1,247	28,553	5,263	30	2	92,510
Agriculture, trade and industry, and tourism	119	225	847	1,054	12,458	19,686	863	1,351	17,908	1,479	172	22	56,184
Agriculture	—	—	—	—	—	18,101	427	381	16,568	—	—	—	47,555
Trade and industry	100	—	427	413	9,703	866	363	—	1,285	1,285	150	—	1,991
Regional development commissions	—	—	46	110	4	—	353	—	353	249	—	—	45,564
Industrial parks and commissions	100	—	381	303	9,699	17,235	64	381	16,215	1,036	150	—	8,629
Tourism	19	225	420	641	2,755	1,585	436	970	1,340	194	22	—	1,147,883
Recreation and culture	13,761	2,690	15,915	20,157	258,301	450,626	39,681	35,528	153,228	155,487	909	1,600	881,349
Recreational facilities	12,682	2,457	10,131	15,926	198,453	321,439	32,194	24,179	132,857	128,814	738	1,479	233,869
Cultural facilities	905	120	5,521	3,956	39,191	113,984	7,176	11,100	16,239	25,558	14	105	42,665
Other	174	113	263	275	20,657	15,203	311	249	4,132	1,115	157	16	8,185,493
Education — primary and secondary	7,674	38,489	299,465	—	2,381,772	2,957,913	347,029	380,089	758,719	1,007,894	—	6,449	1,830,141
Fiscal services	19,678	2,783	38,426	16,066	653,593	562,190	71,261	37,544	182,004	244,481	919	1,156	1,289,150
Debt charges	17,490	2,623	27,248	14,795	516,643	336,613	43,594	21,353	111,050	196,049	552	1,140	98,544
Interest on short-term borrowing	656	189	2,329	1,463	68,207	12,700	2,288	1,293	3,803	5,444	2	170	1,165,740
Interest on long-term borrowing	16,564	2,408	22,745	13,122	439,236	321,878	39,152	16,239	103,889	189,036	549	922	24,866
Other	270	26	2,174	210	9,200	2,035	2,154	3,821	3,358	1,569	1	48	221,200
Transfers to reserves and allowances	658	160	9,780	597	11,681	88,826	7,937	11,536	42,918	46,844	247	16	319,791
Transfers to own enterprises	1,530	—	1,398	674	125,269	136,751	19,730	4,655	28,076	1,588	120	—	11,568
Other services	741	35	659	11	6,713	559	1,747	138	419	537	1	8	19,687,228
Total, general expenditure	108,185	54,834	597,151	181,248	5,410,378	7,364,266	794,196	843,322	2,148,993	2,145,335	11,516	27,804	1,018,422
1978e													
General government	9,270	1,080	23,228	10,477	356,682	336,750	49,365	37,349	85,846	104,188	1,349	2,838	61,756
Executive and legislative	915	146	2,192	1,241	17,012	23,226	2,263	5,711	5,735	—	87	215	714,355
Administrative	6,682	836	18,399	8,301	208,533	303,495	42,225	29,399	69,663	83,261	1,103	2,458	1,760,302
Other	1,673	98	2,537	935	131,137	10,029	4,427	5,382	10,472	15,192	159	165	1,013,948
Protection of persons and property	3,450	2,175	39,900	32,783	502,908	695,490	67,993	52,387	163,883	197,235	1,064	1,239	1,013,948
Police services	449	1,561	18,630	15,165	336,796	398,862	33,614	29,857	85,920	92,985	157	366	572,412
Courts of law and correctional services	—	—	5,152	—	15,006	391	82	1,153	5,119	5,119	157	366	572,412
Fire-fighting services	2,516	585	14,125	14,981	125,244	229,636	25,395	17,891	61,567	79,133	731	608	51,461
Emergency measures	—	—	138	1,478	—	20,067	3,852	1,034	2,385	1,034	114	—	66,801
Regulatory services	234	18	1,037	738	—	38,177	3,852	1,034	6,419	13,827	124	10	48,803
Other	251	6	818	401	25,862	8,357	1,368	802	3,243	3,451	30	3,678	2,691,374
Transportation and communications	21,008	2,705	55,818	48,339	645,434	987,589	112,744	150,493	453,835	206,212	3,530	3,72	2,413,547
Common services	1,182	98	3,897	6,355	6,700	30,387	4,095	7,368	31,897	21,661	125	582	2,413,547
Road	19,640	2,607	48,672	41,229	514,661	947,139	107,358	142,817	421,608	19,445	3,341	2,986	2,413,547
Administration	277	51	1,796	682	48,480	45,347	4,984	2,135	5,055	5,055	60	0	12,256
Engineering	—	—	2,161	646	—	28,324	1,196	3,730	3,730	6,770	2,778	58	1,642,104
Roads and streets	14,915	1,628	36,459	29,981	273,099	637,503	76,283	122,127	324,753	140,413	2,778	2,185	1,642,104
Snow and ice removal	1,470	403	2,962	5,771	122,361	100,858	8,085	4,104	17,346	4,036	168	299	267,866
Bridges, subways, tunnels	20	83	67	—	10,529	41,417	5,205	1,990	40,807	2,352	50	—	102,500
Street lighting	2,437	391	3,924	2,940	38,318	34,414	7,024	5,564	15,418	12,863	162	264	123,719

22.24 General expenditure of local governments, fiscal years ended Dec. 31, 1976-78 (thousand dollars) (concluded)

Year and function	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT	NWT	Canada
1978* (concluded)													
Transportation and communications (concluded)													
Traffic services	116	86	985	761	16,204	33,886	3,165	2,081	12,055	7,500	166	52	77,067
Parking	191	48	119	363	5,670	23,187	717	1,792	2,940	1,929	5	8	35,969
Other	214	—	183	612	119,042	2,193	699	157	448	1,321	—	28	4,573
Public transit	—	—	—	—	—	554	—	83	—	1,875	—	—	121,550
Other	186	—	3,249	143	5,031	9,509	1,291	225	330	—	73	282	22,194
Environment	22,465	3,692	49,592	43,466	545,161	662,474	52,453	60,140	215,974	219,800	8,818	7,552	1,891,587
Water purification and supply	6,984	1,850	25,610	24,474	212,751	239,053	24,545	26,626	82,723	82,723	3,894	5,221	753,977
Garbage collection and disposal	7,798	1,435	14,664	14,645	243,271	265,719	13,053	24,239	87,324	102,607	4,493	1,729	782,197
Garbage and waste collection and disposal	4,627	387	7,467	4,082	78,628	150,348	14,640	9,027	29,853	33,451	426	836	333,772
Other	56	10	131	265	10,311	7,354	248	215	1,551	21,500	5	266	21,641
Health	6	10	40,084	45	5,362	406,987	63,580	130,949	319,817	16,792	69	149	988,758
Preventive services	—	—	—	—	—	122,511	1,960	3,776	1,623	3,055	—	55	153,206
Medical care	6	10	797	45	5,362	—	1,863	553	—	—	—	—	5,501
Hospital care	—	—	39,220	—	—	283,463	59,558	126,549	317,205	1,578	—	37	827,630
Other	—	—	37	—	—	1,013	199	71	—	75	—	57	2,421
Social welfare	—	—	46,436	—	22,252	463,935	11,394	5,949	33,501	29,176	—	—	612,643
Administration	—	—	3,616	—	22,252	17,187	2,356	273	2,599	167	—	—	48,450
Assistance	—	—	21,374	—	—	208,785	8,869	3,651	22,159	27,311	—	—	292,149
Services	—	—	18,555	—	—	235,685	167	1,984	8,599	971	—	—	265,961
Other	—	—	2,891	—	—	2,278	2	41	—	727	—	—	6,083
Housing — general assistance	9,966	1,199	9,014	9,571	71,889	82,556	14,156	7,681	30,842	61,287	2,362	1,071	301,594
Environmental planning and zoning	—	63	1,986	920	21,286	40,747	2,465	1,641	6,839	15,476	8	31	91,462
Community development	9,876	1,104	6,119	8,651	35,857	36,356	11,573	5,650	12,130	44,457	2,133	1,029	174,935
Other	90	32	909	—	14,746	5,453	118	390	11,873	1,354	221	11	35,197
Natural resources	—	—	159	140	64,214	64,214	2,746	1,387	22,325	3,024	28	3	94,026
Agriculture, trade and industry, and tourism	115	263	652	1,195	13,609	17,570	1,240	1,371	7,809	1,868	33	22	45,747
Agriculture	—	—	—	—	—	—	—	—	—	—	—	—	—
Trade and industry	100	—	466	375	10,352	15,292	846	490	6,530	1,391	—	—	35,842
Regional development commissions	—	—	47	11	4	933	499	—	373	311	—	—	2,178
Industrial parks and commissions	100	—	419	364	10,348	14,359	347	490	6,157	1,080	—	—	33,664
Tourism	15	263	208	820	3,257	2,278	394	881	1,279	9,905	33	22	9,905
Recreation and culture	13,532	2,201	17,388	19,785	293,857	467,553	46,597	35,656	168,497	176,464	1,610	1,546	1,244,886
Recreational facilities	12,571	1,971	11,235	15,322	226,106	326,990	38,387	23,186	144,421	141,817	1,581	1,339	944,926
Cultural facilities	961	114	6,146	4,137	44,485	125,396	7,841	12,111	19,389	33,259	29	191	254,059
Other	—	—	207	326	23,266	15,167	369	359	4,687	1,388	—	16	45,901
Education — primary and secondary	41,009	332,672	40,019	—	2,720,637	3,340,134	378,442	396,003	806,995	1,089,181	—	6,494	9,121,789
Fiscal services	22,322	2,842	3,019	17,458	763,671	595,082	76,945	41,142	209,127	264,415	1,593	1,331	2,035,994
Debt charges	20,078	2,554	3,056	16,616	558,727	355,484	50,394	23,482	124,221	215,335	664	1,284	1,399,395
Interest on short-term borrowing	140	2,342	2,542	1,927	70,401	14,317	1,138	1,551	4,509	6,671	10	180	104,095
Interest on long-term borrowing	19,077	2,587	26,047	14,483	478,302	337,167	46,401	17,834	116,349	206,597	653	1,049	1,266,346
Other	292	27	1,967	206	10,024	4,000	2,855	4,097	3,363	2,067	—	55	28,954
Transfers to reserves and allowances	57	288	7,967	90	12,031	85,475	6,554	12,504	49,599	46,993	640	47	222,655
Transfers to own enterprises	1,774	—	1,496	752	192,913	154,123	19,997	5,456	35,307	2,087	289	21	413,944
Other services	565	50	536	17	7,673	453	1,598	289	621	516	—	—	12,341
Total, general expenditure	112,968	57,226	655,698	183,276	5,949,335	8,120,787	879,253	920,791	2,519,072	2,374,866	20,467	25,944	21,819,683

*Preliminary data for 1976.

22.25 Direct debt of local governments, fiscal years ended nearest Dec. 31, 1976 and 1977 (thousand dollars)

Year and direct debt	Nfld.	PEI	NS ¹	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT	NWT	Canada
1976													
Long-term (debentured)	143,358	34,049	213,791	178,822	5,274,125	4,597,934	513,133	250,017	1,721,266	1,912,582	6,409	13,330	14,858,816
Less sinking funds	887	5,901	2,967	2,055	—	664,072	59,792	45,592	1,790	74,229	—	—	863,403
Net long-term (debentured)	142,471	28,148	210,824	176,767	5,274,125	3,933,862	453,341	204,425	1,713,358	1,838,353	6,409	13,330	13,995,413
Short-term borrowings	26,629	2,436	113,969	43,950	629,626	246,219	103,225	23,047	117,339	74,229	680	534	1,381,883
Accounts and other payables	43,926	7,029	85,062	21,669	865,182	563,874	60,360	63,897	249,380	151,114	1,253	4,855	2,117,601
Other liabilities	8,736	816	10,221	3,771	169,222	89,305	16,459	12,523	191,898	110,140	58	1,221	614,370
Total, direct debt less sinking funds	221,762	38,429	420,076	246,157	6,938,155	4,833,260	633,385	303,892	2,271,975	2,173,836	8,400	19,940	18,109,267
1977													
Long-term (debentured)	166,295	35,170	308,644	208,578	6,092,899	4,887,238	582,046	266,643	1,987,713	2,161,345	7,202	15,842	16,719,615
Less sinking funds	794	6,629	3,030	1,699	99,403	632,919	66,136	47,382	6,851	73,617	—	—	938,460
Net long-term (debentured)	165,501	28,541	305,614	206,879	5,993,496	4,254,319	515,910	219,261	1,980,862	2,087,728	7,202	15,842	15,781,155
Short-term borrowings	28,375	2,864	116,985	37,304	455,594	207,543	105,575	21,672	85,083	73,259	17	455	1,134,726
Accounts and other payables	36,618	7,947	109,611	25,729	1,204,519	654,497	66,654	69,429	267,270	132,767	1,354	6,365	2,582,960
Other liabilities	9,322	312	11,069	5,201	155,788	83,457	20,338	11,305	195,133	98,334	225	6,620	597,104
Total, direct debt less sinking funds	239,816	39,664	543,279	275,113	7,809,397	5,199,816	708,477	321,667	2,528,348	2,392,088	8,798	29,482	20,095,945

¹1975 actual data used for 1976; 1976 actual data used for 1977.

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Selected economic indicators

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In this chapter various statistical statements and studies are presented, covering broad areas of Canadian economic activity. These are based on a Canadian system of national accounts which consists of national income and expenditure accounts, indexes of real domestic product, price indexes, the balance of international payments and financial flows. The integrated aggregative economic accounts provide an inter-related framework for analysis of the Canadian economy and its relationship with other countries. In its broad outline, the Canadian national accounts system bears a close relationship to the international standard of the United Nations publication *A system of national accounts*.

National income and expenditure

23.1

National income and expenditure accounts provide accounting summaries for the nation and portray economic activity in terms of transactions taking place between major groups of transactors, namely, governments, corporate and government business enterprises, persons and unincorporated businesses and non-residents. By combining and summarizing these operations into their various classes, information may be obtained on the functioning of the economy which is of particular interest to governments concerned with problems of unemployment, taxation and prices, and to businessmen concerned with programs of investment and marketing.

Annual coverage since 1926 is available in the publication *Income and expenditure accounts, 1926 to 1974*, Statistics Canada Catalogue 13-531 and in the annual publication *System of national accounts — national income and expenditure accounts*, Statistics Canada Catalogue 13-201.

National income. Net national income at factor cost measures the current earnings of Canadian factors of production (land, labour and capital) from productive activity. It includes wages and salaries, profits, interest, net rent and net income of farm and non-farm unincorporated business.

Gross national product (GNP), by totalling all costs arising in production, measures the market value of all final goods and services produced in the current period by Canadian factors of production. It is equal to national income plus net indirect taxes (indirect taxes less subsidies) plus capital consumption allowances and miscellaneous valuation adjustments.

Personal income is the sum of current receipts of income whether or not these receipts represent earnings from production. It includes transfer payments from government (such as family allowances, unemployment insurance benefits and old age security payments) in addition to wages and salaries, net income of farm and non-farm unincorporated business, interest, dividends and net rental income of persons. It does not include undistributed profits of corporations and other elements of the national income not paid out to persons.

Gross national expenditure (GNE) measures the same aggregate as gross national product (total production of final goods and services at market prices) by tracing the disposition of production through final sales to persons, governments and business on capital account, including changes in inventories, and to non-residents (exports). Imports of goods and services, including payments of interest and dividends to non-residents, are deducted since the purpose is to measure only Canadian production.

Economic growth in 1979

23.1.1

Gross national product increased 13.1% to a level of \$260.5 billion in 1979. After allowing for price changes, the volume of GNP rose 2.9%, the third consecutive year of

restrained growth in the economy. Most of the weakness in the growth of the economy has originated in sluggish consumer and government demand, and these components again curtailed the advance of real GNP in 1979. Higher business expenditure for plant and equipment and inventories accounted for most of the increase in GNP in 1979.

Real personal expenditure on goods and services advanced only 2.3% in 1979, a continuation of the moderation that began in 1977 and one of the lowest annual increases in consumer spending in the last two decades. Consumer spending rose moderately through most of 1978 and the first half of 1979 in response to the stimulus of personal income tax cuts and the temporary reduction of sales tax rates in most provinces. With the expiry of these programs, demand slumped sharply as consumers restrained their stocks of durable and semi-durable goods to levels more consistent with the growth of disposable incomes.

The growth of total gross fixed capital formation was restrained to 5.0% in volume by continuing restraint in government capital expenditures and a further reduction in residential construction. Residential construction declined 7.4% in 1979, a worsening from the rates of decline in the previous two years. Business expenditure on plant and equipment rose 10.4%, a continuation of the recovery that began in mid-1978 following several years of weakness. A major part of the upturn originated in the mining and manufacturing industries, coincidental with the strong profit growth and high rates of demand in these areas. Firms continued to adjust capacity with higher purchases of machinery and equipment, up 10.6%. There was also a notable recovery of non-residential construction expenditure in 1979.

In volume terms, inventory accumulation was \$2,069 million in 1979, with virtually all of the increase in non-farm business stocks. The rapid build-up throughout the year largely resulted from the downturn of exports and consumer demand. Inventory accumulation rose markedly for durable goods at all levels. Most of the accumulation originated in the transportation equipment and wood industries in manufacturing, and in motor vehicles and industrial machinery and equipment in trade.

The growth of real merchandise exports slowed noticeably to 2.6%, in line with the pronounced slowdown in the US economy. Merchandise imports continued to expand rapidly, and as a result real net merchandise exports fell \$1,573 million, a sharp reversal from the strength net merchandise exports lent to GNP in the previous two years.

Corporation profits before taxes rose an estimated 33.1%, the second strongest gain in the past two years. The strong recovery of corporate profits began with the decline in the international value of the Canadian dollar in 1977 and continued into 1978 largely on the basis of higher profits in export-oriented industries. The 1979 increase was more diffuse, as profits for domestically-oriented firms also rose strongly.

Wages, salaries and supplementary labour income advanced 10.9%, slightly more than the gains in the previous two years. Most of this upturn reflected continuing strong advances in employment, as average earnings continued to grow moderately despite the high rate of inflation and the expiry of wage and price controls.

Total personal income advanced 11.6% while personal disposable income rose 11.9%. With nominal personal expenditure recording a similar increase, the personal savings rate was virtually unchanged for the third consecutive year at 10.3%.

Total revenues of all levels of government combined increased 13.0%, a much sharper rate of increase than in the previous two years. Increases were particularly notable in revenues from personal and corporate direct taxes and indirect taxes. Total government expenditures rose 8.5% as the rate of increase in outlays on goods and services and transfer payments to persons slowed noticeably. As a result of revenues rising more rapidly than expenditures, the deficit of the government sector, on a national accounts basis, fell from \$8.9 billion in 1978 to \$5.8 billion in 1979.

23.2 Industrial growth and change, 1949-79

In the three decades since 1949 there have been many changes in industrial output and industrial structure. In 1949 the output of the domestic economy (gross domestic product at factor cost in current dollars) was \$15.3 billion; by 1979 this had increased more than 15 times to \$240.0 billion. Most of this change in output was due to changes

in price and if the volume of production is expressed in terms of constant 1971 dollars the increase in output becomes a fourfold increase: from \$27.8 billion in 1949 to \$115.7 billion in 1979. This represents an average annual growth rate of 4.9%.

In the same period the number of persons employed increased from 5.0 million to 9.8 million for an average annual growth rate of 2.3%. Man-hours worked is a more sensitive measure of labour input and takes into account the decrease in the length of the average work week, the increase in vacations, work breaks and other time spent away from the job. Man-hours worked grew at a lesser rate than the number of persons employed for an average annual growth rate from 1949 to 1979 of 1.5%.

Productivity, measured by output per person employed and by output per man-hour, grew in this period at average annual rates of 2.5% and 3.4% respectively. Productivity is most often related to a single input, labour, but not all changes in productivity can be attributed solely to labour. While output per unit of labour input does reflect changes in education, skills, and effort of employed labour, it also reflects the contribution to output of capital investment, capacity utilization, changes in technology and process efficiency. Because of the difficulty in calculating the changes in these other inputs, measures of productivity are usually in terms of labour input.

The trend in output at the aggregate level obscures sharp fluctuations in growth both among industries and among regions. Even at the aggregate level, the pattern of output growth has shown considerable cyclical change. In analyzing the business cycle it has been customary to redefine output to exclude some components of output such as government and agriculture. However, the results of such analysis depend heavily on the definitions used and thus the number of business cycles identified during the last three decades may vary from four to seven or even eight, each one varying in duration and amplitude. Notwithstanding the insight given by more complex analyses, it is possible to generalize certain features of the trend in output in recent years.

From 1949 to 1959 the growth in aggregate real output averaged 5.0% although in the middle of the period, from 1954 to 1956, growth rates were sharply higher than any others during the entire post-war period, being 10.3% from 1954 to 1955 and 8.7% from 1955 to 1956. The decade of the 1960s on the other hand was characterized by a high and sustained level of growth and remains unique for the rate of real output growth attained for its duration. From 1961 to 1969 the average annual rate of growth was 6.1%. In the middle of this period the growth of output peaked again but the peak was sustained for several years.

Given that the 1960s showed unusual strength, it could be expected that in the 1970s there would be a return to lower growth rates. This indeed happened. Although the earlier years of the 1970s showed some strength, particularly until 1973, the later years brought exceptionally low rates of growth. Thus the 18 average annual growth rates of real output calculated from 1961 to 1979 showed a declining trend. The growth rate from 1961 to 1979 of 5.1% was the highest; from 1962 to 1979 it declined to 5.0% and then continued the decline (with few exceptions) to the lowest growth rate of 3.1% from 1978 to 1979.

Since the 1950s, production of both goods and services has moved in a generally cyclical manner. During the 1950s the amplitude of the cyclical movements in terms of the percentage deviation from trend was similar for both goods and services. Since the early 1960s, the production of services has shown considerably less cyclical volatility, but production of goods has become more volatile, with manufacturing the principal contributor to cyclical instability. Production of goods other than manufactured goods, even including such volatile industries as agriculture and construction, has shown more stability than manufacturing since 1960.

In 1975 the sharp interruption in the growth of aggregate output pointed up a number of departures from the patterns of the 1950s and 1960s. The downturn in manufacturing was not only the most severe throughout the period but there were also unusual downturns in goods production other than manufacturing. Most notable of these were in metal mines, crude petroleum and natural gas, and electric power utilities. Downturns in these industries have been rare in the past, and for electric power utilities were unknown since 1945. The service industries, in contrast to the 1950s and 1960s, displayed sustained growth offsetting to some extent the downturn in goods production.

From 1978 to 1979 real domestic product, as already noted, increased by only 3.2%. For the 1971-79 period the annual average growth rate was 4.1%, with 4.6% for services and 3.3% for goods. Because the service industries include governmental and other non-commercial output it is sometimes useful to compare the commercial outputs of the goods and services industries. From 1961 to 1971 both the commercial goods and commercial services industries increased at nearly the same average annual rate of growth: 5.7% for goods and 5.8% for services. In the 1971 to 1979 period the growth rate of commercial goods production was about halved to 3.3%. But commercial services industries continued at nearly the same rate of growth, 5.6%.

There are a number of industries that provided considerable strength during the decade of the 1960s but lagged in the 1970s. A notable example is the output from mines, quarries and oil wells which showed an average annual real growth rate of 6.2% from 1961 to 1971 but only a rate of 0.5% from 1971 to 1979. Manufacturing output showed a growth rate of 6.3% from 1961 to 1971 but only 3.5% from 1971 to 1979. Among manufacturing industries the transportation equipment group showed strong growth in the 1960s, turning out a variety of products from locomotives to snowmobiles

Production from Canadian industry was more than four times greater in 1979 than 30 years earlier, in 1971 constant dollars. The increase of 10.3% between 1954 and 1955 was sharply higher than any other in the post-war period, but relatively high annual increases were sustained through the 1960s. There was a general downward trend in the 1970s; the growth between 1978 and 1979 was 3.1%.

in addition to motor vehicles; the group as a whole showed a strong average annual growth rate of 12.3%. From 1971 to 1979 the growth rate for the group slumped to 4.1%, sustained at that level mainly by automobile and truck output. Among service industries, education showed enormous growth in the 1960s particularly in post-secondary institutions. As a group, education and related services recorded an average annual real growth of 9.4% from 1961 to 1971 but from 1971 to 1979 this dropped to 0.9%. Air transport, which showed growth of 9.0% in the 1971-79 period, is down from the 15.0% annual real growth shown from 1961 to 1971.

The reasons why these industries grew rapidly in the 1960s and suffered a much diminished rate of growth in the 1970s are as diverse as the industries themselves. For most, a return to the higher rates of growth is not foreseeable so that, even while providing strength to the economy, that strength is considerably muted as compared with the 1960s. For many other industries not mentioned in this brief summary, particularly those service industries that continued to provide strength in the 1970s, it is difficult to generalize the probable direction of the growth in output.

23.2.1 Aggregate productivity measures

The level of, and changes in, productivity have a vital influence on economic growth, overall cost structure, international competitiveness and, in the final analysis, on the quality of life. In the measurement of productivity, output is related to one or more kinds of inputs used in the production process.

The measures of productivity presented here relate output to a single input only, namely labour time. It must be emphasized that changes in output per unit of labour input cannot be attributed directly and solely to labour; such measures reflect not only changes in the skills and effort of the labour force but also the contribution of other productive resources with which labour works as well as the effectiveness with which all are combined and organized for the purpose of production. In other words, changes in technology, capital investment, capacity utilization, work flow, managerial skills and labour-management relations all have a bearing on movements in what is termed labour productivity. The measures of unit labour cost are the ratios of labour compensation to output. Unit labour cost can also be obtained as the ratio of average compensation to

productivity; thus unit labour cost will increase when average compensation grows more rapidly than productivity.

Sources of data. The output components of the various indexes of output per unit of labour input and unit labour cost referred to here are the indexes of real domestic product by industry. Developed within the conceptual framework of the system of national accounts, they measure in constant dollar terms the contribution of each component industry to total output.

The major sources for the employment and man-hour indexes are the monthly labour force and employment surveys and these are supplemented by data from such sources as the annual censuses of manufactures and mining and the decennial censuses of population. Since the data from these diverse sources vary considerably in their coverage, concepts and methods of compilation, care has to be exercised in selection, adaptation and combination of the data into aggregate measures of labour input which are conceptually and statistically consistent, both internally and in relation to the output data. Labour force data are used for the paid worker estimates of agriculture and of fishing and trapping while those for manufacturing and mining are based on adjusted annual census data. Estimates for most of the remaining industry divisions are derived from employment survey data. Estimates of other than paid workers (own-account workers, employers and unpaid family workers) are derived mainly from the labour force survey. Estimates of average hours worked, needed for the indexes of man-hours, are also based on labour force survey data except in the case of manufacturing where man-hours data reported in the census of manufactures were also used. Labour compensation is the sum of wages, salaries, supplementary labour income and an imputed labour income for self-employed workers. For imputed labour income the average hourly income of paid workers is attributed to self-employed persons in the same industry division. Indexes of output per person employed, output per man-hour and unit labour cost for commercial industries and the major components are presented in Table 23.14.

Growth rates. Between 1961 and 1979, output per person employed in the commercial industries increased at an annual average rate of 2.7%. Output per man-hour increased more rapidly, 3.5% a year, reflecting reductions in the average work week. A review of the period since 1961 shows higher growth rates in labour productivity during the first decade than for the years since 1971. Output per man-hour increased at an average rate of 4.2% a year for the years 1961-71 and at an average rate of 2.2% a year for the years 1971-79. However, there is considerable variation in the year-to-year per cent changes of output per man-hour for the 1970s, ranging from a high of 5.2% in 1971 to no change in 1975. In 1976 output per man-hour increased by 5.0%, but the rate of growth has successively declined in each year since, down to 0.5% in 1979.

Commercial goods-producing industries recorded higher rates of growth in output per man-hour than the commercial service-producing industries, with the former increasing at an average rate of 4.3% a year and the latter at 2.5% a year for the years 1961-79. Output per man-hour in manufacturing increased 3.9% a year for the period 1961-79. Unit labour cost for commercial industries increased at an average annual rate of 2.9% a year for the period 1961-71, and 8.8% for the period since 1971. In 1979 the increase in unit labour cost was 7.4%. Unit labour cost for manufacturing increased at an average annual rate of 1.9% for the period 1961-71 and 8.8% for 1971-79. The increase in unit labour cost in 1979 was 8.7%.

Price indexes

23.3

Retail price indexes

23.3.1

This section describes price indexes currently available for goods and services purchased by consumers at the retail level.

Consumer price index (CPI). The consumer price index measures the change in the retail prices of goods and services purchased by Canadian consumers living in urban centres with a population of over 30,000. In the revision of the CPI, which became

effective in October 1978, the restrictions on the population covered in terms of family size and income size were removed. As a consequence, the proportion of the population to which the CPI applies has increased considerably. Since October 1978, the CPI has been based on weights derived from 1974 family expenditure patterns, replacing the 1967 weights (1969 within food) which were in use since May 1973. These weights are fixed until replaced by more recent data on expenditure behaviour. The CPI may be interpreted as a measure of the change in the cost of purchasing a given basket of goods and services containing about 750 items. The time reference base has remained 1971 = 100 for the all-items index and its major components.

Movements in the CPI up to the end of 1977 are described in previous editions of the *Canada Year Book*. Based on changes in annual average indexes, the all-items CPI (1971 = 100) advanced 9.0% in 1978 and 9.1% in 1979 rising from a level of 160.8 in 1977 to 175.2 in 1978 and to 191.2 in 1979. The increases in the two most recent years point to a significant acceleration in the rates of growth in consumer prices when compared to the 7.5% and 8.0% increases recorded in 1976 and 1977 respectively. On the basis of annual averages the all-items index indicates that the purchasing power of the 1971 consumer dollar declined from 62 cents in 1977 to 57 cents in 1978 and subsequently to 52 cents in 1979.

Between 1977 and 1978, the 9.0% increase in the all-items index was due largely to a 15.5% rise in the food index and a 7.5% increase in the housing index. Over two-fifths of the change in the all-items index was attributable to higher food prices while close to an additional one-third of the overall change was due to higher housing charges.

Price increases of 13.2% for food, 9.7% for transportation, 9.2% for clothing and 7% for housing between 1978 and 1979 were leading factors in higher costs for Canadian consumers. The buying power of the 1971 dollar, down to 62 cents in 1977 and 57 cents in 1978, continued dropping to 52 cents in 1979.

Transportation costs rose 5.8% and also made a significant contribution to the change in the all-items index. Between 1978 and 1979, the all-items index rose 9.1% again largely due to price increases for food, housing and transportation which rose 13.2%, 7.0% and 9.7% respectively. A sharp acceleration in the rise of clothing prices, up from 3.8% in 1978 to 9.2% in 1979, also had a significant impact on the all-items index.

Another perspective of consumer price movements is evident in analyses of goods and services. Based on annual averages, the goods index rose 10.1% in 1978 and 10.6% in 1979, while the service index advanced 6.8% in 1978 and 7.0% in 1979. A substantial proportion of the sharper increase in the prices of goods relative to the prices of services in both 1978 and 1979 was due to comparatively larger increases in food prices than in non-food prices.

Consumer price indexes for 15 selected regional cities are shown in Table 23.17. In the revision instituted in October 1978, city indexes were recomputed to adjust for methodological differences between such indexes and their Canada counterparts. These revised indexes are available from January 1971 and have replaced the previously published series which terminated in September 1978. As before, the new indexes measure percentage changes in retail prices over time within the specified cities and should not be used to make comparisons of price levels among cities. On the basis of annual averages, advances in consumer prices in 1978 ranged from 7.7% in Halifax and Vancouver to 9.1% in Regina. In 1979, increases ranged from 7.7% in Vancouver to 9.8% in St. John's. In 13 cities, price advances accelerated in 1979 compared to 1978, while in the two remaining cities, the rates of increase remained unchanged.

Table 23.18 provides data on the percentage changes in consumer price indexes based on annual averages for a selected group of countries for the years 1977, 1978 and where available, 1979. Compared with the CPI for the United States the Canada CPI rose faster in 1977 and 1978, while in 1979 the US CPI was advancing at a significantly faster pace. In 1979 consumer prices in Canada also rose noticeably less than those reported

for the United Kingdom and France. There are methodological differences among various countries in the construction of the price indexes and these differences could, by themselves, account for some of the differences.

Intercity consumer price indexes. Table 23.41 provides a basis for price level comparisons across 11 cities. They express prices in each city as a percentage of the combined cities average of 100, showing comparisons of September 1978 and September 1979. The selected six components of the CPI constitute over 60% of the average consumer's budget. For technical reasons, prices associated with shelter (for both owned and rented facilities), clothing and restaurant meals are not included.

The retail prices used in the construction of indexes on intercity price level comparisons are largely those routinely collected in each city for the production of the CPI. The exception is the food for home consumption component which is computed from prices collected from a special survey carried out in October and April of each year. Comparability between cities is assured, as far as possible, by matching quotations for goods and services characterized by similar qualities and sold in similar types of retail outlets. Since retail prices, by definition, include sales and excise taxes, variations in the proportion of sales tax applied between provinces, largely on non-food commodities, may account for a substantial part of intercity price differentials.

For further details on CPI movements for Canada and for 15 cities see *The consumer price index*, Statistics Canada Catalogue 62-001, monthly. Longer CPI time series and other related price information are available from *Consumer prices and price indexes*, Statistics Canada Catalogue 62-010, quarterly. For additional information on the structure of the CPI see *The consumer price index. Revision based on 1974 expenditures. Concepts and procedures*, Statistics Canada Catalogue 62-546, occasional.

Industry selling price indexes (manufacturing)

23.3.2

Commodity and industry indexes (1971 = 100) are provided for some 120 manufacturing industries as classified by the 1970 Standard Industrial Classification. Commodity weights were derived from surveys of the 1971 Census of Manufactures. Sub-commodity and establishment weights are derived either from 1971 or subsequent surveys. Indexes are published monthly in *Industry price indexes*, Statistics Canada Catalogue 62-011. New order prices reported by manufacturers exclude outbound transportation and sales taxes and are net of discounts. The indexes are gross weighted which means that price movement for less highly manufactured goods is in effect counted both directly as it first appears in production and indirectly as its price movement has an impact on the selling prices of industries purchasing the goods. For example, flour has its own weight as an output of the flour mills industry and also has an implicit impact on output price movement of the bakery industries.

Other industrial selling price indexes

23.3.3

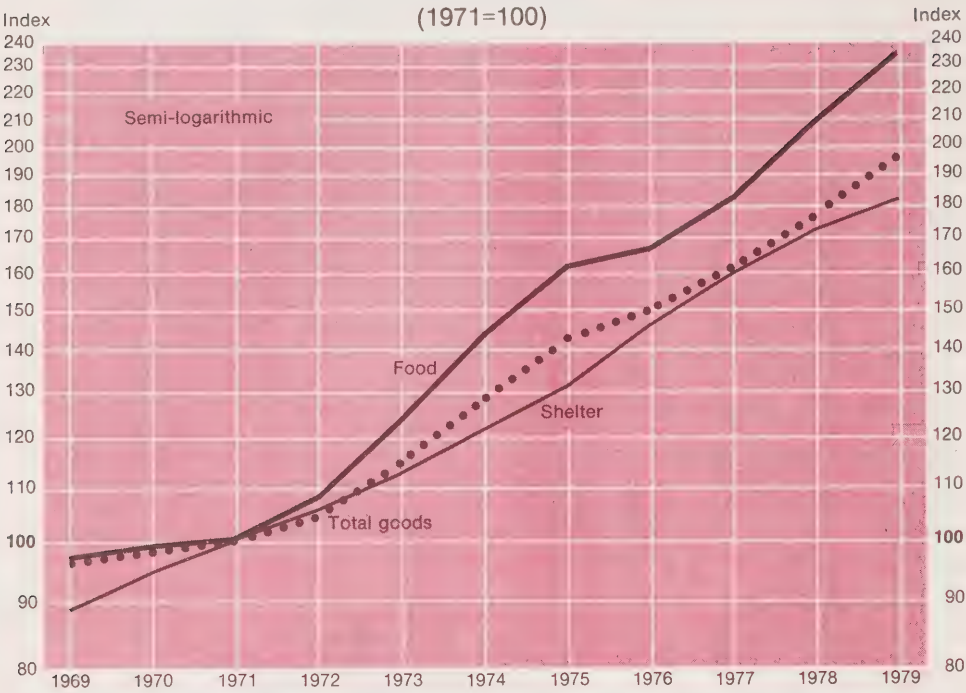
Selected energy price indexes. Industrial and consumer prices indexes (1971 = 100) have been selected to facilitate comparison of rates of price change of different types of energy. The industrial prices indexes are derived from refinery company selling prices (excluding taxes), purchase prices of thermal coal reported mainly by electric utilities (including exchange rates and some transportation) and electric utility selling prices of electricity to large volume purchasers such as municipal distribution utilities.

Retail price indexes are derived from surveys of retail distributors of gas, gasoline, fuel oil and electricity, and are affected by changes in provincial retail sales taxes.

Purchase price indexes for secondary materials. Ferrous and non-ferrous secondary or scrap materials indexes (1971 = 100) are compiled from a series of input prices, inclusive of transportation and brokerage fees, submitted by a wide variety of purchasers from selected industries. Some commodity detail is also provided and the series are published in *Industry price indexes*, Statistics Canada Catalogue 62-011.

Farm input price indexes. Changes in prices of commodities and services used as inputs into the agriculture industry are measured to give quarterly and annual statistics. The weights for the indexes are based on 1971 estimates of farm expenditures.

Consumer price index components, 1969-79
(not seasonally adjusted)



These are published quarterly in *Farm input price indexes, 1971 = 100*, Statistics Canada Catalogue 62-004. Sub-component indexes are available for Eastern and Western Canada and also by type of expenditure category.

23.3.4 Price indexes of selected capital goods

Wage rates and residential and non-residential building construction. Indexes and rates for both basic union wages and an hourly rate including selected supplements are available monthly for 22 cities and 16 trades in *Construction price statistics*, Statistics Canada Catalogue 62-007, in summary form and in detail from the Canadian socio-economic information management system, CANSIM, a Statistics Canada computer data bank. The city indexes are presented here.

The series are combined with selected materials price indexes to yield special purpose input indexes for single unit residential construction and non-residential building construction. While only total indexes are presented here some regional and commodity detail is available in the monthly *Construction price statistics*. These series are affected by, among other things, changes in federal sales tax.

New housing price indexes. These fixed-weighted indexes of builder selling prices measure market selling prices agreed between builder and buyer in purchase contracts for new houses. Major builders who build similar models in successive time periods report selling prices which encompass the structure, land and services to land if these are not provided separately by municipality; they exclude legal fees, provincial land transfer taxes and similar costs to the buyer for property acquisition. Price movements cover single unit houses in the cities specified and semi-detached and row condominiums in

cities where this type of housing is widespread. Not provided here but available in *Construction price statistics* are separate land and structure indexes.

Output price indexes of non-residential construction. Contractors selling prices for selected classes of construction in four cities are aggregated to give estimates of price change for a school, an office building and a light industrial building. Unlike input price indexes, these indexes (1976 = 100) are affected by changes in contractor's profits and productivity.

Highway construction price indexes. These base-weighted indexes relate to prices paid by provincial governments in contracts awarded for highway construction. The indexes measure the effect of price change on the cost of specified new highway construction projects represented by contracts of approximately \$50,000 or more awarded by provincial governments. Prices contained in the index are for units of construction work put in place by contractors. Also included are prices of materials usually supplied by the highways department such as culverts and asphalt.

Electrical utility construction indexes. The price indexes (1971 = 100) of electrical utility construction of distribution systems, transmission lines, transformer stations, hydroelectric and steam-electric generating stations, give an estimate of the impact of price change on the cost of materials, labour and equipment used in building and equipping electrical utilities. The index provides an estimate of how much it would cost to reproduce the base-period program of construction in another period using the same construction technology and assuming similar rates of profit and productivity.

Chemical and mineral process plant indexes. These fixed-weighted indexes (1971 = 100) measure the price movements of components representative of a processing installation bought by companies with a large processing activity such as chemicals, pulp and paper, petroleum refining and mineral processing. There are index components for engineering and administration of the project, the construction of the buildings and the purchase and installation of the machinery and equipment. Indexes for the period 1972-79 are given in Table 23.21.

Chemical and petro-chemical plant price indexes. These quarterly fixed-weighted price indexes (1971 = 100) provide an estimate of price change for the installation of a plant in which gases and liquids only are processed. Weights were derived from 1971 company codes of accounts. Prices used were derived from the data system created for the chemical and mineral processing plant index.

Balance of international payments

23.4

The Canadian balance of international payments summarizes transactions between residents of Canada and those of the rest of the world. Current account transactions, which measure the flow of goods and services between Canada and other countries, are included, with minor adjustments, as a component of gross national expenditure. Capital account transactions between residents and non-residents are included in the financial flow accounts. A summary of the Canadian balance of international payments is provided in Table 23.33 for 1973-79. Table 23.34 contains some additional information on Canada's official international monetary assets for the period 1977-79 and Table 23.35 contains a detailed presentation of the Canadian balance of international payments for 1978-79.

Current account

23.4.1

During 1979 international transactions in goods, services and unilateral transfers led to a current account deficit of \$5.0 billion. A surplus of \$4.0 billion on merchandise trade was more than offset by the continuing growth in the deficit on non-merchandise transactions which climbed to \$9.0 billion.

In 1979 merchandise exports and imports each rose by 24% to \$65.2 billion and \$61.2 billion, respectively. The resultant surplus of \$4.0 billion recorded on merchandise trade was 18% higher than in 1978. Exports of energy materials were particularly strong in 1979 led by an increase of \$1.1 billion in exports of petroleum and coal products. Crude petroleum exports rose by \$956 million to \$2.5 billion. Almost half the quantity of oil exported in 1979 was under exchange agreements calling for a barrel-for-barrel

exchange of oil between Canada and the United States. Exports under these arrangements were up by 44% from 1978. In 1979, the volume of conventionally licensed exports declined by 11%, reflecting further reductions in export allocations for light crude oil and condensate exports. Natural gas exports increased by \$857 million as both prices and volumes rose in 1979. The total increase in exports of energy materials amounted to \$3.4 billion, equivalent to more than a quarter of the total increase in merchandise exports. Other significant increases were recorded for exports of wood pulp, wheat and other grains, lumber, iron ore, chemicals and aircraft engines and parts.

Exports of automotive products fell by \$578 million while imports rose by \$1.8 billion causing Canada's automotive trade deficit to expand to \$3.0 billion. Crude petroleum imports increased by \$1.1 billion to a level of \$4.6 billion. Imports of crude petroleum from the United States under exchange agreements more than doubled in value to \$1.2 billion. The deficit on trade in crude petroleum remained practically unchanged at \$2.0 billion. Other important increases were recorded for imports of precious metals, iron and steel, aircraft engines and parts, telecommunications and related equipment, and tractors.

The deficit on non-merchandise transactions rose by a moderate 4% to \$9.0 billion. Net service payments, however, expanded by 10% to \$9.6 billion while net inflows of unilateral transfers jumped to \$620 million from only \$43 million in 1978. Net interest and dividend payments advanced by almost a fifth to \$5.2 billion. Interest receipts which came mainly from earnings on Canadian official monetary reserves, were up only slightly in 1979 to \$230 million. Interest payments rose by \$529 million to \$3.9 billion due mainly to the servicing of the large foreign debt incurred by the provinces and their agencies. Dividend payments were up by 12% to \$2.3 billion despite unusually high payments in 1978 due to a number of companies availing themselves of the opportunity to distribute to shareholders tax-paid surplus accumulated prior to 1972, before tax regulations pertaining to such distributions were changed effective from the end of 1978. Increased outflows of miscellaneous income transactions (covering income on short-term and miscellaneous long-term investments and all services associated with international banking and insurance operations) caused the deficit on "other service" transactions to expand by more than a quarter to \$2.7 billion.

A deficit of \$1.1 billion was recorded on international travel transactions compared to a \$1.7 billion deficit in 1978. Travel receipts rose by a fifth to \$2.9 billion while payments fell slightly to \$4.0 billion. In volume terms the number of Canadian travellers fell by almost 8% to 36.1 million compared to virtually no change in the number of overseas travellers at 33.2 million. The large increase in the surplus recorded on unilateral transfer transactions was almost entirely due to a sharp drop in the amount of Canada's official contributions which were unusually high in 1978 due to the forgiveness of loans to a number of developing countries.

23.4.2 Capital account

Capital movements during 1979 resulted in a net inflow of \$11.1 billion comprising a long-term net inflow of \$3.2 billion on a short-term net inflow of \$7.9 billion. The first allocation of Special Drawing Rights (SDRs) by the International Monetary Fund since 1972 produced \$219 million while the balancing item was equivalent to a net outflow of \$4,402 million. The overall surplus led to an increase in net reserve assets of \$1,919 million.

Following the relative stability of the Canadian dollar during 1979, the Government of Canada was able to repay \$1.2 billion of its borrowing in foreign currencies. This represents a substantial shift from 1978 when \$5.6 billion was borrowed. The flows of funds associated with these borrowings are reflected in several accounts of the balance of payments.

Foreign direct investment in Canada produced a net inflow of \$735 million, a substantial turnaround from the net outflow of \$125 million in 1978 and represented the highest annual net inflow since 1974. The 1979 net inflow was composed of a net inflow of \$818 million related to capital formation and working capital requirements and a net outflow of \$83 million attributable to repatriations and other special transactions. The latter figure conceals the spurt of takeover activity which continued to prevail, with

residents purchasing on a large scale foreign-owned assets in Canada. The repatriation of these assets, which was mainly in the petroleum sector, gave rise to a net outflow of \$721 million. This was largely offset by a net inflow of \$638 million for other special transactions. Part of this inflow was accounted for by the purchase of the minority interests in Canadian Superior Oil Ltd. by Superior Oil Co. and by the contractual conversion of short-term debt to a long-term liability.

Canadian direct investment abroad amounted to a net outflow of \$1,855 million, down from the 1978 high of \$2,010 million. Most of the 1979 net outflow was for working capital or capital formation requirements. Among the largest unusual transactions were inflows resulting from the sale in the first half of the year of the main Brazilian subsidiary of Brascan Ltd. and the Norwegian subsidiary of Aluminum Co. of Canada Ltd. (Alcan).

For the year as a whole, new issues sold abroad amounted to \$5,104 million, down from \$6,591 million in 1978. Part of these inflows was accounted for by the Government of Canada which placed abroad new bond issues in foreign currencies amounting to \$2.3 billion in 1978 and \$715 million in 1979. The exclusion of these foreign currency borrowings by the Government of Canada would leave the total amount raised in foreign bond markets by other borrowers at approximately \$4.2 billion in both 1978 and 1979. Retirements of Canadian securities held by non-residents resulted in a record net outflow of \$1,719 million, compared with \$1,191 million in 1978. Trade in outstanding Canadian securities gave rise to a net inflow of \$823 million, a turnaround from the net outflow of \$361 million in 1978.

Transactions in foreign securities resulted in a net outflow of \$542 million, a swing from a net inflow of \$42 million in 1978.

Development assistance in concessional loans from the Canadian government to developing countries and international agencies led to a net outflow of \$549 million, about the same level as in 1978. Of this total, \$321 million went to international agencies (of which two-thirds went to the World Bank group) and \$228 million to developing countries. Repayments by foreign governments amounted to \$33 million, the bulk of it accounted for by the United Kingdom. The financing of medium- and long-term export credits, extended directly or indirectly at the risk of the Canadian government in the fourth quarter, resulted in a net outflow of \$780 million, slightly lower than the net outflow of \$808 million in 1978.

Other capital movements in long-term forms led to a net inflow of \$1,960 million, compared to \$1,389 million in 1978. As in 1978, the bulk of this net inflow was accounted for by borrowing by the different levels of governments in medium-term credits from foreign banks (of which \$211 million in 1978 and \$888 million in 1979 were borrowed by the Government of Canada).

Short-term capital movements gave rise to a record net inflow of \$7.9 billion, up \$7.4 billion from the previous year. Net inflows were recorded in every major sector with the Canadian banks accounting for \$4.4 billion and the money market for \$548 million of this total. The offset to the borrowing by the authorities from the Canadian chartered banks gave rise to an inflow of \$1.3 billion.

Official international monetary assets and liabilities

23.4.3

Net official monetary assets, excluding valuation adjustments, increased by \$1,919 million, as a decrease of \$847 million in reserve assets was more than offset by repayments of \$2,766 million of the borrowing by the Government of Canada from foreign and Canadian banks. Valuation adjustments increased the value of the reserves by \$52 million. These adjustments represent the effect on the Canadian dollar value of the reserves of changes in the value of the Canadian dollar vis-à-vis other currencies and Special Drawing Rights and the revaluation to market prices of gold transactions between the mint and the exchange fund account.

Foreign exchange

23.5

The dollar was established as the official currency of the united provinces of Canada in January 1858, and extended to cover the new dominion by the Uniform Currency Act

of 1870. The gold sovereign remained the standard for the Canadian dollar until 1910 when the currency was defined in terms of fine gold, making it the exact gold equivalent of the US dollar. Both British and US gold coins, however, were legal tender in Canada during this period.

The 1870 act defined the Canadian dollar as 15/73 of the British gold sovereign, that is, the par rate of exchange between the dollar and the pound sterling was fixed at \$4.866, making the Canadian currency the equivalent of the US dollar at parity. With only minor variations the value of the pound sterling in Canada remained at this level until 1914.

For a complete description of the fluctuations between Canadian and US dollars up to 1950 see the *Canada Year Book* 1972, pp 1252-1254.

In October 1950 official fixed foreign exchange rates which had been in effect at varying levels since 1939 were withdrawn and the rate was then determined within the framework of exchange control. In December 1951 the foreign exchange control regulations were revoked by the Governor-in-Council, ending the period of exchange control that had prevailed in Canada since 1939. The Foreign Exchange Control Act was repealed in 1952. In May 1962 the Canadian dollar was stabilized at a fixed par value of 92.5 cents in terms of US currency. This action was taken with the concurrence of the International Monetary Fund (IMF) and, in accordance with the articles of agreement of that organization, the Government of Canada undertook to maintain the Canadian exchange rate within a margin of 1% on either side of the established par value.

In May 1970, the federal government announced a decision not to maintain the exchange rate of the Canadian dollar within the 1% parity band prescribed by the IMF for the time being. The movements of the US dollar in Canadian funds from January 1973 to December 1979 are shown in Table 23.39 while Table 23.40 gives the value of the Canadian dollar in US funds and major overseas currencies. Details of Canada's official international reserves in US dollars are presented in Table 23.34.

During 1979, the value of the Canadian dollar stabilized somewhat against the US dollar. The declining trend prevailing since the end of 1976 bottomed out in February with the Canadian dollar reaching 83.20 US cents, its lowest level since April 1933. It rallied dramatically in March reaching a high of 87.78 US cents and drifted downward, thereafter, closing the year 1.39 US cents higher than at the end of 1978. On a trade-weighted average, similarly, the Canadian dollar depreciated in the first two months of 1979, recovered temporarily in March and April, then continued to depreciate to close the year at virtually the same level as that prevailing at the end of 1978.

23.6 Canada's international investment position

Canada has been among the world's largest importers of capital as the demand for real resources from abroad has been associated with a pattern of consistent current account deficits and net inflows of capital. This pattern was interrupted by sizable current account surpluses in 1970 and 1971 and then a much smaller one in 1973. Sizable current account deficits have been registered in recent years with deficits of over \$5 billion being registered in 1978 and 1979. In addition to capital inflows, which are a counterpart to net deficits on the current account, undistributed earnings accruing to non-residents have also been a significant factor. These two sources of funds have helped capital formation in Canada and stimulated production, earnings and employment.

Preliminary estimates produced on the basis of available data indicate that Canada's net indebtedness to other countries reached a book value of over \$69 billion at the end of 1979, up from \$61 billion in the preceding year. Canadian long-term investment abroad increased to \$37 billion with direct portfolio investment abroad accounting for almost 70% of the growth. The major elements in this increase were outflows of long-term direct investment capital, reinvested earnings accruing to Canadians from their investments abroad and export credits.

With the inclusion of short-term claims on non-residents, the total of Canada's external assets amounted to over \$66 billion. The accumulated balance of net errors and omissions, which was in a debit position, contributed significantly to the growth in short-

term assets while net official monetary assets, with repayment of short-term borrowings under standby credit facilities during 1978, rose to \$4.2 billion.

Reflecting largely an inflow of portfolio capital and the growth in reinvested earnings accruing to non-residents, foreign long-term investment in Canada increased to \$109 billion. With the addition of other long-term liabilities (such as non-resident equity in Canada's assets abroad and official SDR liabilities) and short-term claims by non-residents, Canadian liabilities amounted to about \$135 billion.

Canada's balance of international indebtedness rose by \$6.5 billion to \$48.5 billion at the end of 1976, the last year for which full estimates are available, following a growth of \$6.9 billion in 1975. The balance of international indebtedness represents the amount by which Canada's outstanding liabilities or obligations to other countries exceeds Canada's assets or claims against other countries. Following increases of 20% in 1975 and 12% in 1974, net indebtedness expanded sharply by 15% in 1976. At year-end 1976 Canada's gross liabilities, the amount owing to other countries in long-term and short-term forms, stood at \$97.3 billion, an increase of 17% over 1975. This was offset partially by \$48.8 billion in gross assets, the total amount owing to Canada by non-residents, which grew by 19% from \$41 billion.

The term balance of international indebtedness is used here, in a balance of payments context, to include equity investment and contractual borrowing. It is determined by offsetting Canada's outstanding claims against other countries with the outstanding obligations of Canadians to other countries. The totals of international claims and obligations acquired over the years, arising from capital transactions and other factors, constitute the international assets and liabilities determining a country's international investment position.

Canadian assets abroad

23.6.1

Among the assets, Canadian long-term investment abroad rose 9% in 1976 to \$23.5 billion with direct investment rising 9% to \$11.5 billion, and miscellaneous investments due largely to export credits increasing 9% to \$4.0 billion. Net official monetary assets rose by half a billion dollars to \$5.9 billion during the year while short-term receivables rose 7% to \$4.7 billion.

The book value of Canada's direct investment abroad at the end of 1976 amounted to \$11.5 billion, an increase of \$975 million or about 9% over that recorded a year earlier. Net direct investment capital outflows abroad, as recorded in the balance of payments, accounted for some \$590 million of this growth, with the reinvestment of earnings accounting for most of the balance.

At \$2,034 million, about 18% of total Canadian direct investment abroad in 1976 was invested in Europe, an increase of \$169 million for the year. The United Kingdom, with \$1,037 million, was the third largest recipient country after the United States and Brazil, and together with the \$712 million invested in other countries of the European Economic Community, accounted for 86% of Canadian direct investment in Europe.

In African, Asian and Australasian countries Canadian direct investment grew by \$39 million to \$1,108 million, with this group representing 10% of the direct investment total. Direct investment in Asian countries other than Japan rose by 44% to \$350 million, with Indonesia, the Philippines and India having the largest investments.

Manufacturing was the most important industrial category with 49% of Canadian direct investment abroad at the end of 1976. Investment in utilities at \$1,591 million comprised about 14% and petroleum and natural gas at \$1,376 million about 12%. During the period 1972 to 1976 investment in petroleum and natural gas grew at a yearly average of 20%, while utilities recorded a modest 4% gain. Canadian direct investment in mining and smelting at \$1,228 million increased at an average annual rate of 26% from 1972 to 1976.

External liabilities

23.6.2

At the end of 1976 Canadian gross external liabilities amounted to \$97.3 billion. Long-term investment owned by non-residents comprised \$81.4 billion or 84% of the total.

Direct investment, representing basically foreign capital (both long-term debt and equity) in Canadian enterprises attributable to the country of control, grew 8% to \$43.1

billion at the end of 1976. Direct investment continued to be the largest single component of foreign long-term investment in Canada at 53%, down from 58% at year-end 1975.

During 1976 portfolio transactions in Canadian securities gave rise to record net capital inflows of \$8.6 billion in the balance of payments. Foreign investment in government bonds increased 35% to reach \$20.6 billion at the end of 1976 with provincial governments and their agencies the most active borrowers, accounting for nearly \$16.8 billion, up almost \$4.4 billion from 1975. The spate of new issues abroad was spurred by substantial capital requirements by provincial utilities to finance large-scale developments as well as by a lower rate of interest abroad. Foreign placements of bonds by municipal governments were also quite large, increasing 31% to a level of \$2.7 billion at the end of the year.

Investors in the United States continued to provide most of the funds for Canada's bond issues, accounting for about \$4,882 million or 57% of the net increase, to hold \$21,666 million. UK residents held \$1,187 million in Canadian debt securities, a growth of \$310 million, while residents of all other countries absorbed \$3,255 million during 1976 to hold \$7,733 million.

Foreign investment in Canadian corporate portfolio investment increased by \$3.4 billion to \$13.5 billion at year-end 1976. Miscellaneous investment comprising such things as foreign investment in real estate, mortgages, private investment companies and assets administered for non-residents increased marginally to nearly \$3.6 billion.

Foreign long-term investment owned by US residents grew 14% to \$60.5 billion at the end of 1976. Direct investment, the largest component, rose 8% to nearly \$34.7 billion while holdings of government bonds advanced by 33% to nearly \$14.7 billion. Of these claims by US investors, the capital stock of Canadian companies at nearly \$28.3 billion comprised 47% while bonds and debentures, both government and corporate, represented 36%.

Long-term investment owned by investors in the United Kingdom rose 11%, to nearly \$6.3 billion in 1976. There was a sizable gain of 21% in government bonds held while direct investment grew 7% to \$3.9 billion. A breakdown of these liabilities to the United Kingdom by type of claim shows that about 61%, or \$3.8 billion, was in the capital stock of Canadian companies while only 19% was invested in bonds and debentures.

Investment owned in all other countries increased 42% to \$14.6 billion as investment in government bonds jumped 44% to nearly \$5.3 billion and other portfolio investment 115% to \$3.4 billion. A large number of new Canadian issues were sold in the Eurobond market in 1976. Several factors such as the temporary removal of the withholding tax on interest payments by corporations to non-residents on certain types of new issues, the high credit rating of the borrowers, and the high coupon rates offered made such issues highly marketable. Eurodollar rates in general were lower than Canadian bond yields and the registration requirements less costly to fulfil than those faced by borrowers in the United States. By type of claim, investment in bonds and debentures at \$7.7 billion comprised 53% of the total investment from this group of countries while investment in the capital stock of Canadian companies at nearly \$4.1 billion was 28%.

Long-term investment in manufacturing grew 11% to nearly \$20.5 billion at the end of 1976. Within manufacturing the largest increases were registered by iron and products, chemicals and allied products and non-ferrous metals. Investment in petroleum and natural gas rose by 9% to \$11.8 billion while that in mining and smelting expanded by 8% to \$5.9 billion. Long-term investment in the financial industry rose 24% to more than \$9.4 billion, and in merchandising 10% to nearly \$3.3 billion. A substantial portion of the increase in finance was registered by sales finance, insurance and real estate enterprises.

23.6.3 Foreign investment in Canadian non-financial industries

Foreign investment in Canadian industry is measured in terms of the proportion to long-term capital employed in selected industry groups of both foreign-owned long-term

capital in those industries and total long-term capital employed in enterprises controlled by non-residents in those industries.

The estimated book value of total long-term capital, debt and equity employed in non-financial industries in Canada amounted to \$147.3 billion at the end of 1975, an increase of 14% from 1974. Foreign-owned capital comprised 33% of this total, a drop from the level of 34% which had prevailed since 1974. Investment by residents of the United States rose by 12%, compared to an advance of 10% in 1974 to \$39.4 billion. Foreign control of these industries which remained unchanged from the previous year at 33% was projected to have dropped by one percentage point each in the two following years to 31% at the end of 1977.

Among the five major industrial groups, foreign control ranged from a high of 74% in the petroleum and natural gas industry to a low of 1% in the railways. Foreign-controlled capital in manufacturing comprised 56% and in mining 60%. In the other utilities category foreign control was 4%. The only increase in foreign control was in mining which rose to 60% from 58% at the end of 1974. There were decreases in control by non-residents in manufacturing, petroleum and natural gas and railways while other utilities remained unchanged from 1974.

Financial activity in Canada, 1979

23.7

The total volume of funds raised in credit markets by the domestic non-financial sectors of the Canadian economy fell by 3.8% in 1979 to \$57.4 billion, following an extraordinary increase of 38.7% in 1978 over 1977. The rest of the world sector showed the largest decrease in funds supplied, down to \$5.4 billion in 1979 from \$7.9 billion in 1978. Funds supplied to credit markets by the chartered banks continued to run at a high rate of \$21.1 billion in 1979, up 3.8% over the previous year.

Borrowing by general government in 1979 fell to less than half the 1978 value. A contributing factor was the federal government repayment of more than \$1.5 billion in loans from Canadian and foreign banks. Net new bond issues fell to \$8.1 billion from \$11.9 billion in 1978, reflecting decreases at all levels of government. If Canada savings bonds are separated from marketable Canada bonds, it is apparent that net issues of the latter increased while net sales of Canada savings bonds dropped precipitously. This drop was a result of high redemptions and low sales caused by steeply rising interest rates offered on competitive instruments. The federal government helped finance its large deficit by running down its cash balances during 1979.

Borrowing by non-financial government enterprises fell to \$3.7 billion, from \$6.0 billion in 1978, primarily due to a decline in net new stock issues. The large stock issues concentrated in the fourth quarter of 1978 were in the form of term preferred shares. In the fall of 1978, the tax advantages of this form of financing were severely reduced, all but eliminating this instrument from the market in 1979. This factor also influenced new stock issues of non-financial private corporations, but a booming stock market more than compensated for this factor and funds raised via stocks increased to \$5.3 billion from \$4.8 billion in 1978.

The shorter-term borrowing by domestic non-financial sectors increased to \$22.7 billion in 1979 or 39.6% of the total raised of \$57.4 billion, compared to 36.4% in 1978. Steeply rising interest rates during the latter half of the year may have created a fear on the part of borrowers of committing themselves to long-term debt at high rates. Over the year, the yield on three-month treasury bills rose by 320 basis points to 13.66% and the yield on long-term Canada bonds rose by 164 basis points to 11.32%. These movements were concentrated in the fall and largely reflect the credit tightening actions taken in the United States by the federal reserve to fight inflation. Short-term US rates climbed steeply during the fall, peaking in October, falling sharply, then rising again.

The Bank of Canada continued its policy of restraining the rate of growth of the narrowly defined stock of money within a previously defined target range and M1 (currency and demand deposits in Canada) grew by 6.9% during the year, compared to 10.1% in 1978. The bank's actions, as in other years, were influenced by the need to maintain higher Canadian interest rates in relation to US rates. This is necessary to avoid

imposing excessive burdens on the short-term capital account of Canada's international payments and therefore on the exchange value of the Canadian dollar.

A summary of the financial market for 1978 and 1979 is presented in Table 23.42. More detailed data for individual sectors plus summary matrices are available in the quarterly Statistics Canada publication *Financial flow accounts*, Catalogue 13-002.

Sources

- 23.1 Gross National Product Division, Economic Statistics Field, Statistics Canada.
- 23.2.1 - 23.2.2 Industry Product Division, Economic Statistics Field, Statistics Canada.
- 23.2.3 Input-Output Division, Economic Statistics Field, Statistics Canada.
- 23.3 Prices Division, Economic Statistics Field, Statistics Canada.
- 23.4 - 23.6 Balance of Payments Division, Economic Statistics Field, Statistics Canada.
- 23.7 Financial Flows and Multinational Enterprise Division, Economic Statistics Field, Statistics Canada.

Tables

... not available
 ... not appropriate or not applicable
 -- nil or zero
 -- too small to be expressed

e estimate
 p preliminary
 r revised
 certain tables may not add due to rounding

23.1 Gross national product in current and constant (1971) dollars, and index of gross national expenditure in constant (1971) dollars, 1961-79

Year	Gross national product		Index of gross national expenditure in constant (1971) dollars ^f (1971 = 100)
	Millions of current dollars	Millions of constant (1971) dollars	
1961	39,646	54,741	58.2
1962	42,927	58,475	62.1
1963	45,978	61,487	65.3
1964	50,280	65,610	69.7
1965	55,364	69,981	74.4
1966	61,828	74,844	79.5
1967	66,409	77,344	82.2
1968	72,586	81,864	87.0
1969	79,815	86,225	91.6
1970	85,685	88,390	93.9
1971	94,450	94,450	100.0
1972	105,234	100,248	106.1
1973	123,560	107,812	114.1
1974 ^r	147,528	111,678	118.2
1975 ^r	165,343	113,005	119.6
1976 ^r	191,166	119,116	126.1
1977 ^r	209,379	121,949	129.1
1978	230,407	126,127	133.5
1979	260,533	129,826	137.5

23.2 National income and gross national product, by component, 1976-79 (million dollars)

Item	1976 ^r	1977 ^r	1978	1979
Wages, salaries and supplementary labour income	107,914	119,003	129,885	144,058
Military pay and allowances	1,453	1,515	1,609	1,695
Corporation profits before taxes ¹	20,060	22,169	26,069	34,709
Deduct: dividends paid to non-residents ²	-1,719	-2,056	-2,355	-2,676
Interest, and miscellaneous investment income ³	11,068	12,892	15,174	18,615
Accrued net income of farm operators from farm production ⁴	3,305	2,908	3,740	4,537
Net income of non-farm unincorporated business, incl. rent ⁵	8,612	9,020	9,612	10,503
Inventory valuation adjustment	-2,064	-3,437	-4,308	-6,436
Net national income at factor cost	148,629	162,014	179,426	205,005
Indirect taxes less subsidies	21,391	23,828	25,423	27,539
Capital consumption allowances and miscellaneous valuation adjustments	20,919	22,923	25,146	27,828
Residual error of estimate	227	614	412	161
Gross national product at market prices	191,166	209,379	230,407	260,533

¹Excludes profits of government business enterprises.

²Includes withholding tax.

³Includes profits (net of losses) of government business enterprises and other government investment income.

⁴Includes value of physical change in farm inventories and accrued earnings of farm operators arising out of operations of the Canadian Wheat Board.

⁵Includes net income of independent professional practitioners and imputed net rent on owner-occupied dwellings.

23.3 Gross national expenditure, 1976-79 (million dollars)

Item	1976 ^r	1977 ^r	1978	1979
Personal expenditure on consumer goods and services	110,655	122,424	135,220	150,831
Government current expenditure on goods and services	38,648	43,588	48,112	51,751
Gross fixed capital formation	44,895	48,193	52,028	59,175
Government	6,318	6,790	7,408	8,027
Business	38,577	41,403	44,620	51,148
Residential construction	12,321	12,806	13,358	13,832
Non-residential construction	12,105	13,472	14,460	17,226
Machinery and equipment	14,151	15,125	16,802	20,090
Value of physical change in inventories	1,566	502	803	4,575
Government	41	43	58	60
Business	1,049	359	395	4,236
Non-farm	476	100	350	279
Farm and grain in commercial channels	45,601	52,558	62,296	76,412
Exports of goods and services	-49,973	-57,274	-67,641	-82,051
Deduct: imports of goods and services	-226	-613	-411	-160
Residual error of estimate				
Gross national expenditure at market prices	191,166	209,379	230,407	260,533

23.4 Gross national expenditure in constant (1971) dollars, 1976-79 (million dollars)

Item	1976 ^r	1977 ^r	1978	1979
Personal expenditure on consumer goods and services	75,093	77,272	79,563	81,399
Government current expenditure on goods and services	21,731	22,367	22,632	22,421
Gross fixed capital formation	27,389	27,243	27,209	28,566
Government	3,859	3,849	3,932	3,926
Business	23,530	23,394	23,277	24,640
Residential construction	6,565	6,288	5,940	5,498
Non-residential construction	7,415	7,645	7,729	8,516
Machinery and equipment	9,550	9,521	9,608	10,626
Value of physical change in inventories	940	221	494	2,069
Government	22	22	28	26
Business				
Non-farm	743	253	374	2,018
Farm and grain in commercial channels	175	-54	92	25
Exports of goods and services	26,220	28,057	30,673	31,586
Deduct: imports of goods and services	-32,149	-32,872	-34,234	-36,167
Residual error of estimate	-108	-339	-210	-48
Gross national expenditure in constant (1971) dollars	119,116	121,949	126,127	129,826

23.5 Year-to-year percentage change in gross national expenditure, 1976-79

Item	1976 ^r	1977 ^r	1978	1979
Personal expenditure on consumer goods and services				
Value	14.1	10.6	10.5	11.5
Volume	6.3	2.9	3.0	2.3
Price	7.4	7.5	7.3	9.0
Government current expenditure on goods and services				
Value	15.8	12.8	10.4	7.6
Volume	1.6	2.9	1.2	-0.9
Price	14.0	9.6	9.1	8.6
Gross fixed capital formation				
Value	12.1	7.3	8.0	13.7
Volume	2.7	-0.5	-0.1	5.0
Price	9.1	7.9	8.1	8.4
Government				
Value	-0.1	7.5	9.1	8.4
Volume	-6.5	-0.3	2.2	-0.2
Price	6.9	7.8	6.8	8.5
Business				
Value	14.4	7.3	7.8	14.6
Volume	4.4	-0.6	-0.5	5.9
Price	9.6	8.0	8.3	8.3
Residential construction				
Value	33.5	3.9	4.3	3.5
Volume	19.3	-5.1	-4.6	-7.4
Price	11.9	9.5	9.4	11.9
Non-residential construction				
Value	3.5	11.3	7.3	19.1
Volume	-3.2	3.1	1.1	10.2
Price	9.2	7.9	6.2	8.1
Machinery and equipment				
Value	10.6	6.9	11.1	19.6
Volume	3.7	-0.3	0.9	10.6
Price	6.6	7.2	10.1	8.1
Exports of goods and services				
Value	12.7	15.3	18.5	22.7
Volume	9.3	7.0	9.3	3.0
Price	3.1	7.7	8.4	19.1
Imports of goods and services				
Value	9.6	14.6	18.1	21.3
Volume	8.3	2.2	4.1	5.6
Price	1.2	12.1	13.4	14.8
Gross national expenditure at market prices				
Value	15.6	9.5	10.0	13.1
Volume	5.4	2.4	3.4	2.9
Price	9.7	7.0	6.4	9.9

23.6 Personal income, by source and by province, 1976-79 (million dollars)

Source and province or territory	1976 ^r	1977 ^r	1978	1979
Source				
Wages, salaries and supplementary labour income	107,914	119,003	129,885	144,058
Military pay and allowances	1,453	1,515	1,609	1,695
Net income received by farm operators from farm production	3,272	2,874	3,514	4,226
Net income of non-farm unincorporated business including rent	8,612	9,020	9,612	10,503
Interest, dividends and miscellaneous investment income	13,920	15,534	18,219	22,790
Current transfers				
From government				
Transfer payments to persons (excl. interest on public debt)	19,483	22,455	25,229	26,545
Capital assistance	172	156	216	273
From corporations (charitable and other contributions and bad debts)	281	307	347	384
From non-residents	278	331	383	417
Total, personal income	155,385	171,195	189,014	210,891
Province or territory				
Newfoundland	2,573	2,835	3,023	..
Prince Edward Island	550	596	680	..
Nova Scotia	4,409	4,902	5,422	..
New Brunswick	3,453	3,774	4,159	..
Quebec	39,217	43,050	47,929	..
Ontario	60,969	67,220	73,770	..
Manitoba	6,478	7,022	7,702	..
Saskatchewan	6,205	6,394	7,046	..
Alberta	12,778	14,558	16,410	..
British Columbia	18,222	20,247	22,224	..
Yukon and Northwest Territories	396	452	491	..
Foreign countries ¹	135	145	158	..

¹Income of Canadians temporarily abroad, including pay and allowances of Canadian Armed Forces abroad.

23.7 Disposition of personal income, 1976-79 (million dollars)

Item	1976 ^r	1977 ^r	1978	1979
Personal expenditure on consumer goods and services	110,655	122,425	135,220	150,831
Current transfers				
To government				
Income taxes	21,047	23,168	24,326	27,389
Succession duties and estate taxes	148	151	114	100
Employer and employee contributions to social insurance and government pension funds	7,158	7,760	8,690	9,123
Other	1,470	1,601	1,930	2,064
To corporations (transfer portion of interest on the consumer debt)	1,815	1,932	2,407	3,338
To non-residents	256	269	285	295
Personal savings	12,836	13,889	16,042	17,751
Total, personal income	155,385	171,195	189,014	210,891

23.8 Personal expenditure on consumer goods and services, 1976-79 (million dollars)

Item	1976 ^r	1977 ^r	1978	1979
Food and non-alcoholic beverages	16,595	18,184	20,539	23,181
Tobacco and alcoholic beverages	6,100	6,675	7,294	7,971
Clothing, footwear and accessories	8,116	8,784	9,537	10,758
Gross rent, fuel and power	19,173	22,058	24,638	27,513
Furniture, furnishing and household equipment and operation	11,115	12,006	13,078	14,450
Transportation and communication	16,380	17,988	19,652	22,454
Medical care and health services	3,325	3,596	3,971	4,410
Other	29,851	33,134	36,511	40,094
Total	110,655	122,425	135,220	150,831
Durables	17,033	18,459	20,102	22,574
Semi-durables	14,134	15,359	16,756	18,963
Non-durables	33,987	37,563	42,034	47,124
Services	45,501	51,044	56,328	62,170

23.9 Federal, provincial and local government revenue and expenditure¹, 1976-79 (million dollars)

Item	1976 ^r	1977 ^r	1978	1979
Revenue				
Direct taxes: persons and unincorporated business				
Income taxes	21,047	23,168	24,326	27,389
Succession duties and estate taxes	148	151	114	100
Employer and employee contributions to social insurance and government pension funds	7,158	7,760	8,690	9,123
Direct taxes: corporate and government business enterprises	7,262	7,211	7,863	10,300
Direct taxes: non-residents (withholding taxes)	504	534	582	754
Indirect taxes	24,864	27,101	28,777	31,563
Other current transfers from persons	1,470	1,601	1,930	2,064
Investment income				
Interest and royalties	7,592	8,859	10,565	12,259
Remitted profits of government business enterprises	772	1,048	1,344	1,496
Total, revenue	70,817	77,433	84,191	95,048
Current expenditure				
Purchases of goods and services	38,648	43,588	48,112	51,751
Transfer payments to persons	19,483	22,455	25,229	26,545
Current transfers to non-residents	542	635	1,014	769
Interest on the public debt	8,050	9,209	10,897	13,088
Capital assistance	529	602	662	731
Subsidies	3,473	3,273	3,354	4,024
Savings	92	-2,329	-5,077	-1,860
Total, current expenditure	70,817	77,433	84,191	95,048
Surplus or deficit (on a national accounts basis)				
Savings	92	-2,329	-5,077	-1,860
Add: capital consumption allowances	2,827	3,157	3,629	4,154
Deduct: gross capital formation	-6,359	-6,833	-7,466	-8,087
Equals: surplus or deficit	-3,440	-6,005	-8,914	-5,793

¹Excludes current transfers from other levels of government.**23.10 Annual average growth rates of real domestic product, by industry, selected periods, 1961-79**

Industry	1961-69	1969-79	1961-79	1971-79
Agriculture	2.0	2.8	2.1	3.2
Forestry	5.7	2.0	3.4	2.3
Fishing and trapping	2.0	1.9	0.8	3.5
Mines (incl. milling), quarries and oil wells	6.0	1.8	4.3	0.5
Manufacturing	7.3	3.8	5.0	3.5
Non-durables	5.7	3.7	4.5	3.5
Durables	8.9	3.9	5.6	3.5
Construction	5.3	3.3	3.9	2.8
Electric power, gas and water utilities	7.9	7.1	7.8	6.5
Transportation, storage and communication	6.9	5.9	6.5	5.5
Transportation	7.1	4.0	5.6	3.4
Trade	6.0	5.0	5.4	4.3
Wholesale	6.9	4.0	5.1	5.0
Retail	5.5	5.6	5.6	5.0
Finance, insurance and real estate	4.9	5.8	5.4	5.8
Community, business and personal services	6.4	6.8	6.4	6.9
Public administration and defence	2.6	3.7	3.5	3.3
Real domestic product	6.1	4.4	5.1	4.1

23.11 Quantity indexes of real domestic product at factor cost, by industry of origin, 1975-79 (1971=100)

Industry	1975 ^r	1976 ^r	1977 ^r	1978	1979 ^r
Agriculture	98.0	104.2	108.8	117.8	116.5
Forestry	97.6	112.3	116.4	123.8	127.3
Fishing and trapping	88.3	102.1	106.9	126.5	130.0
Mines (incl. milling), quarries and oil wells	107.1	109.8	114.0	105.3	113.4
Manufacturing	114.3	120.8	124.1	133.8	138.2
Non-durables	112.0	118.6	121.6	132.9	138.0
Durables	116.6	122.9	126.6	134.6	138.4
Construction	116.7	122.8	121.8	120.7	123.1
Electric power, gas and water utilities	130.7	142.9	151.0	159.7	169.8
Transportation, storage and communication	126.9	133.7	139.5	145.2	154.6
Trade	128.8	135.1	136.5	140.9	143.5
Wholesale	121.8	126.8	127.1	131.4	134.0
Retail	133.8	140.8	143.0	147.5	150.1
Finance, insurance and real estate	127.8	135.6	143.7	150.5	155.7
Community, business and personal services	119.9	125.7	129.9	134.0	138.3
Public administration and defence	119.6	123.0	126.1	128.8	127.1
Real domestic product	119.8	126.1	130.1	135.3	139.6

23.12 Percentage share of gross domestic product by goods- and service-producing industries, 1949, 1961 and 1971

Item	1949	1961	1971
Goods-producing industries	53.080	44.401	40.572
Service-producing industries	46.920	55.559	59.428
Gross domestic product	100.000	100.000	100.000

23.13 Census value added in goods-producing industries, by industry and province, 1977

Industry	Province or territory							
	Newfoundland		Prince Edward Island		Nova Scotia		New Brunswick	
	\$'000	%	\$'000	%	\$'000	%	\$'000	%
Agriculture	15,912	1.1	46,515	27.8	69,483	4.0	56,979	3.8
Forestry	39,999	2.9	—	—	24,410	1.4	72,965	4.9
Fishing	85,497	6.1	15,164	9.1	133,145	7.7	34,367	2.3
Hunting and trapping	146	--	126	0.1	829	--	702	--
Mines (incl. milling), quarries and oil wells	435,980	31.1	—	—	121,189	7.0	79,538	5.3
Electric power, gas and water utilities	165,053	11.8	7,038	4.2	116,332	6.8	121,400	8.1
Manufacturing	351,237	25.0	44,989	26.9	776,170	45.1	677,749	45.3
Construction	309,174	22.0	53,380	31.9	481,103	27.9	451,798	30.2
Total	1,402,998	100.0	167,212	100.0	1,722,661	100.0	1,495,498	100.0
	Quebec		Ontario		Manitoba		Saskatchewan	
	\$'000	%	\$'000	%	\$'000	%	\$'000	%
Agriculture	684,919	3.5	1,591,439	4.6	540,503	19.3	1,441,306	37.6
Forestry	284,987	1.5	231,149	0.7	11,932	0.4	18,338	0.5
Fishing	21,196	0.1	14,314	--	9,915	0.4	3,317	0.1
Hunting and trapping	5,408	--	11,071	--	5,582	0.2	6,760	0.2
Mines (incl. milling), quarries and oil wells	901,844	4.6	1,418,804	4.1	152,665	5.4	989,936	25.8
Electric power, gas and water utilities	1,231,226	6.2	1,588,270	4.6	221,710	7.9	100,183	2.6
Manufacturing	12,324,579	62.4	24,271,425	70.3	1,201,283	42.9	489,184	12.7
Construction	4,288,342	21.7	5,411,245	15.7	657,645	23.5	785,529	20.5
Total	19,742,501	100.0	34,537,717	100.0	2,801,235	100.0	3,834,553	100.0
	Alberta		British Columbia		Yukon and Northwest Territories		Canada	
	\$'000	%	\$'000	%	\$'000	%	\$'000	%
Agriculture	959,912	6.6	292,024	3.0	..	..	5,698,992	6.3
Forestry	26,501	0.2	729,807	7.4	—	—	1,440,088	1.6
Fishing	1,238	--	167,905	1.7	2,359	0.9	488,417	0.5
Hunting and trapping	7,377	0.1	2,096	--	3,925	1.5	44,022	--
Mines (incl. milling), quarries and oil wells	7,843,187	53.9	1,154,107	11.7	221,943	84.9	13,319,193	14.7
Electric power, gas and water utilities	294,999	2.0	505,178	5.1	26,036	10.0	4,377,425	4.8
Manufacturing	2,028,510	13.9	4,604,064	46.5	6,972	2.7	46,776,162	51.7
Construction	3,397,217	23.3	2,439,108	24.6	..	..	18,274,541	20.2
Total	14,558,941	100.0	9,894,289	100.0	261,235	100.0	90,418,840	100.0

¹Included with British Columbia.

23.14 Aggregate productivity measures, for selected years, 1961-79 (1971=100)

Year and industry	Output	Persons employed	Man-hours	Output per person	Output per man-hour	Labour compensation	Unit labour cost
Commercial industries							
1961	57.0	80.1	86.6	71.1	65.8	44.4	77.9 ^r
1966	79.8	93.6	97.7	85.3	81.6 ^r	66.3	83.0
1971	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1972 ^r	106.2	103.2	102.4	102.9	103.7	111.1	104.6
1973 ^r	115.4	108.3	107.6	106.6	107.3	129.6	112.2
1974 ^r	121.2	113.7	112.4	106.6	107.9	154.4	127.4
1975 ^r	121.5	114.8	112.6	105.8	107.9	177.9	146.4
1976 ^r	128.7	116.4	113.5	110.5	113.3	203.8	158.4
1977 ^r	133.1	119.0	114.1	111.8	116.7	223.4	167.8
1978	139.2	122.0	117.7	114.0	118.2	243.4	174.9
1979	144.5	127.0	121.7	113.8	118.8	271.5	187.9
Annual rate of change ¹							
1961-79 %	5.3	2.5	1.8	2.7	3.5	11.0	5.4
1961-71 %	5.8	2.3	1.5	3.3	4.2	8.8	2.9
1971-79 %	4.5	2.8	2.2	1.6	2.2	13.7	8.8

23.14 Aggregate productivity measures, for selected years, 1961-79 (1971 = 100) (concluded)

Year and industry	Output	Persons employed	Man-hours	Output per person	Output per man-hour	Labour compensation	Unit labour cost
Commercial non-agricultural industries							
1961	56.5	75.1	79.7	75.2 ^r	70.9 ^r	43.1	76.2
1966	79.0	92.3	96.2	85.6	82.1	65.6	83.0
1971	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1972 ^r	107.0	104.0	103.6	102.8	103.3	111.5	104.2
1973 ^r	116.4	109.9	109.4	105.9	106.4	129.6	111.3
1974 ^r	122.6	115.7	114.6	106.0	107.0	154.9	126.3
1975 ^r	122.5	116.8	114.6	104.9	106.9	178.5	145.6
1976 ^r	129.7	118.7	116.1	109.3	111.8	204.2	157.4
1977 ^r	134.1	121.7	117.3	110.2	114.4	223.6	166.7
1978	140.1	124.8	121.3	112.3	115.5	242.7	173.3
1979	145.7	130.0	125.4	112.1	116.2	271.5	186.3
Annual rate of change¹							
1961-79 %	5.4	3.0	2.4	2.4	3.0	11.2	5.5
1961-71 %	5.9	3.0	2.4	2.8	3.5	9.1	3.0
1971-79 %	4.5	3.1	2.6	1.4	1.9	13.7	8.8
Commercial goods-producing industries							
1961	56.5	91.7	97.3	61.6	58.0 ^r	47.2	83.6 ^r
1966	82.1	101.7	105.4	80.7	77.9	70.5	85.9
1971	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1972	104.9 ^r	100.9	100.1	103.9 ^r	104.7	109.2	104.2 ^r
1973 ^r	114.3	104.8	104.4	109.0	109.4	129.2	113.0
1974 ^r	117.6	107.5	107.2	109.3	109.7	153.2	130.3
1975 ^r	113.3	106.1	105.1	106.7	107.8	173.5	153.2
1976 ^r	119.8	106.5	105.2	112.5	113.9	197.7	165.0
1977 ^r	123.0	105.8	103.1	116.2	119.3	216.4	176.0
1978	128.9	106.5	104.4	121.0	123.5	233.5	181.1
1979	133.3	110.3	107.6	120.8	123.8	258.8	194.2
Annual rate of change¹							
1961-79 %	4.7	0.8	0.3	3.8	4.3	10.2	5.3
1961-71 %	5.7	0.9	0.3	4.7	5.4	8.2	2.3
1971-79 %	3.3	0.9	0.6	2.3	2.6	13.1	9.5
Commercial service-producing industries							
1961	57.5	69.2	75.7	83.1	76.0	41.5	72.2
1966	77.3	85.8	90.0	90.0 ^r	85.9	61.8	79.9
1971	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1972 ^r	107.5	105.4	104.7	102.0	102.7	113.1	105.2
1973 ^r	116.6	111.6	110.8	104.5	105.2	130.0	111.5
1974 ^r	124.8	119.5	117.7	104.4	106.1	155.7	124.7
1975 ^r	129.7	123.1	120.3	105.4	107.8	182.5	140.8
1976 ^r	137.4	125.7	122.0	109.3	112.6	210.1	152.9
1977 ^r	143.1	131.5	125.4	108.8	114.1	230.7	161.2
1978	149.3	136.8	131.4	109.2	113.6	253.8	170.0
1979	155.6	142.8	136.1	108.9	114.3	284.9	183.1
Annual rate of change¹							
1961-79 %	5.9	4.1	3.3	1.7	2.5	11.8	5.6
1961-71 %	5.8	3.9	2.9	1.8	2.8	9.6	3.6
1971-79 %	5.6	4.4	3.7	1.1	1.8	14.4	8.3
Agriculture							
1961	66.8	133.6	142.2	50.0	47.0	78.8	118.0 ^r
1966	96.7	106.5	110.0	90.8 ^r	87.9	83.0	85.8 ^r
1971	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1972 ^r	88.5	94.3	92.8	93.9	95.3	101.8	115.1
1973 ^r	93.7	91.5	92.9	102.4	100.9	129.5	138.2
1974 ^r	89.8	92.9	94.6	96.7	94.9	143.1	159.4
1975 ^r	98.0	94.1	96.5	104.2	101.5	164.0	167.4
1976 ^r	104.2	91.9	93.2	113.4	111.8	193.3	185.5
1977 ^r	108.8	90.9	88.6	119.7	122.8	221.2	203.3
1978	117.8	93.0	89.2	126.7	132.0	266.8	226.5
1979	116.5	94.9	92.0	122.8	126.7	275.9	236.9
Annual rate of change¹							
1961-79 %	2.1	-2.1	-2.5	4.3	4.7	7.4	5.2
1961-71 %	2.1	-3.0	-3.7	5.3	6.0	3.0	0.9
1971-79 %	3.2	-0.5	-0.9	3.7	4.2	14.9	11.3
Manufacturing							
1961	54.4 ^r	83.6	84.4	65.1	64.4 ^r	46.9	86.1 ^r
1966	81.5 ^r	101.3	103.4	80.5	78.9	71.9	88.2
1971	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1972 ^r	107.1	102.9	102.7	104.1	104.4	110.6	103.2
1973 ^r	117.6	107.4	107.0	109.5	109.9	126.7	107.7
1974 ^r	122.0	109.5	109.3	111.4	111.7	148.9	122.0
1975 ^r	114.3	106.8	105.1	107.0	108.8	164.3	143.7
1976 ^r	120.8	106.9	105.7	112.9	114.3	188.7	156.2
1977 ^r	124.1	104.6	103.0	118.7	120.5	205.4	165.5
1978	133.8	106.2	106.0	125.9	126.1	226.7	169.5
1979	138.3	110.4	108.8	125.3	127.2	254.8	184.2
Annual rate of change¹							
1961-79 %	5.0	1.3	1.1	3.7	3.9	9.9	4.6
1961-71 %	6.3	2.1	1.9	4.2	4.4 ^r	8.3	1.9
1971-79 %	3.5	0.7	0.5	2.8	2.9	12.6	8.8

¹ Annual rates of change are calculated from the least squares of the logarithms of the index numbers for all years in the time span.

23.15 Consumer price indexes for specific groups, 1966-79 (1971=100)

Year	Food	Housing	Clothing	Transportation	Health and personal care	Recreation, education and reading	Tobacco and alcohol	All-items index
Group weight as a percentage of total ¹	21.5	34.1	10.1	15.8	4.0	8.3	6.2	100.0
1966	88.7	79.5	87.0	82.6	81.8	80.1	83.7	83.5
1967	89.9	82.9	91.4	86.1	86.0	84.1	85.8	86.5
1968	92.8	86.7	94.1	88.3	89.5	88.3	93.6	90.0
1969	96.7	91.2	96.7	92.4	93.8	93.5	97.2	94.1
1970	98.9	95.7	98.5	96.1	98.0	96.8	98.4	97.2
1971	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1972	107.6	104.7	102.6	102.6	104.8	102.8	102.7	104.8
1973	123.3	111.4	107.7	105.3	109.8	107.1	106.0	112.7
1974	143.4	121.1	118.0	115.8	119.4	116.4	111.8	125.0
1975	161.9	133.2	125.1	129.4	133.0	128.5	125.3	138.5
1976	166.2	148.0	132.0	143.3	144.3	136.2	134.3	148.9
1977	180.1	161.9	141.0	153.3	155.0	142.7	143.8	160.8
1978	208.0	174.1	146.4	162.2	166.2	148.2	155.5	175.2
1979	235.4	186.2	159.9	178.0	181.2	158.4	166.7	191.2

¹These weights, indicating the components' relative importance, are based on 1974 expenditures and have been incorporated since October 1978; from May 1973 to September 1978 the weights reflected 1967 expenditures; prior to May 1973, the weights reflected 1957 expenditures.

23.16 Consumer price indexes reclassified by goods and services¹, 1966-79 (1971=100)

Year	Goods		Semi-durable	Durable	Total	Total services	All-items
	Non-durable	Food					
Group weight as a percentage of total ¹	16.9	16.6	11.2	15.6	60.3	39.7	100.0
1966	88.7	84.5	87.1	92.2	87.8	76.1	83.5
1967	89.9	86.9	91.6	94.7	90.0	80.2	86.5
1968	92.8	91.5	94.5	96.2	93.4	84.4	90.0
1969	96.7	94.7	97.1	97.2	96.3	90.0	94.1
1970	98.9	97.0	98.7	98.4	98.2	95.3	97.2
1971	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1972	107.6	102.9	102.4	101.2	104.6	105.2	104.8
1973	123.3	108.3	107.0	102.6	113.7	111.7	112.7
1974	143.4	120.4	117.2	110.4	128.1	120.5	125.0
1975	161.9	136.0	124.0	118.9	142.0	133.4	138.5
1976	166.2	147.6	129.9	125.3	149.0	149.7 ²	148.9
1977	180.1	159.0	138.3	131.7	160.0	163.2	160.8
1978	208.0	170.5	143.7	139.4	176.2	174.3	175.2
1979	235.4	185.7	156.2	152.8	194.9	186.5	191.2

¹The previous supplementary classification (by type of commodity and service) has been revised. Historical series relating to the revised classification replace the previously published indexes.

²These weights, indicating the components' relative importance, are based on 1974 expenditures and have been incorporated since October 1978; from May 1973 to September 1978, the weights reflected 1967 expenditures while prior to May 1973, they incorporated 1957 expenditures.

23.17 Consumer price indexes for regional cities, 1971-79 (1971 = 100)

Year	City and province							
	St. John's, Nfld.	Charlotte-town, PEI ¹	Halifax, NS	Saint John, NB	Quebec, Que.	Montreal, Que.	Ottawa, Ont.	Toronto, Ont.
1971	100.0	—	100.0	100.0	100.0	100.0	100.0	100.0
1972	105.8	—	104.7	105.7	103.7	104.3	104.8	104.9
1973	116.0	—	113.1	114.5	111.8	111.9	113.1	113.2
1974	130.8	100.0	124.3	126.5	124.5	124.5	125.4	125.1
1975	145.8	111.4	136.8	141.0	137.2	138.1	137.5	138.5
1976	157.3	120.0	148.3	150.9	146.5	147.4	147.9	148.6
1977	169.1	129.7	159.8	162.4	159.3	159.7	160.0	160.1
1978	182.8	140.1	172.1	175.4	172.2	173.1	173.4	173.7
1979	200.8	152.1	187.4	191.7	188.0	188.9	188.7	189.8

23.17 Consumer price indexes for regional cities, 1971-79 (1971 = 100) (concluded)

Year	City and province						
	Thunder Bay, Ont.	Winnipeg, Man.	Regina, Sask.	Saskatoon, Sask.	Edmonton, Alta.	Calgary, Alta.	Vancouver, BC
1971	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1972	104.4	104.7	104.6	104.8	104.6	104.3	105.3
1973	112.2	111.7	111.6	111.3	112.7	111.4	112.9
1974	124.3	123.4	122.0	121.8	124.2	122.6	126.1
1975	138.3	138.7	134.9	135.5	137.6	136.6	140.1
1976	150.4	150.6	146.9	146.6	148.7	148.0	153.7
1977	162.1	162.7	161.2	159.1	162.2	160.5	164.7
1978	175.2	176.5	175.8	171.6	176.7	173.8	177.4
1979	190.7	192.7	190.5	186.8	192.5	188.9	191.1

¹1974 = 100.

23.18 Percentage change in consumer price indexes in Canada and other countries, 1977, 1978 and 1979

Country	% change			Country	% change		
	1977	1978	1979		1977	1978	1979
North America				Africa			
Canada	8.0	9.0	9.2	Kenya (Nairobi)	14.9	16.9	—
Mexico (Mexico City)	29.0	17.5	—	South Africa (European population)	11.1	10.2	13.2
United States	6.5	7.5	11.3	Zaire (Kinshasa)	63.1	58.4	—
South America				Asia			
Argentina (Buenos Aires)	176.1	175.5	—	India	8.5	2.5	—
Brazil (Sao Paulo)	43.7	38.7	52.7	Indonesia (Jakarta)	11.0	8.6	24.4
Chile (Santiago)	91.9	40.1	33.4	Korea, Republic of	10.1	14.4	18.3
Europe				Pakistan (Karachi) — industrial workers	10.1	6.7	—
Belgium	7.1	4.5	4.4	Sri Lanka (Colombo)	1.3	12.1	—
Denmark	11.1	10.1	9.6	Australasia			
France	9.5	9.2	10.7	Australia	12.3	7.9	9.1
Germany, Federal Republic of	3.6	2.8	4.1	New Zealand	14.5	11.9	13.8
Greece	12.2	12.5	—	Middle East			
Ireland	13.6	7.6	13.2	Iran	27.3	11.6	—
Netherlands	6.4	4.1	4.2	Israel	34.6	50.6	78.3
Sweden	11.4	9.9	7.3	Turkey (Ankara)	27.1	45.3	—
Switzerland	1.3	1.1	3.6				
United Kingdom	15.9	8.3	13.5				

23.19 Implicit price indexes, gross national expenditure, 1974-79 (1971=100)

Item	1974	1975	1976	1977	1978	1979
Personal expenditure on consumer goods and services	124.2	137.3	147.4	158.4	170.0	185.3
Government current expenditure on goods and services	135.1	156.0	177.8	194.9	212.6	230.8
Gross fixed capital formation	133.3	150.2	163.9	176.9	191.2	207.2
Government	138.0	153.2	163.7	176.4	188.4	204.5
Business	132.5	149.6	163.9	177.0	191.7	207.6
Residential construction	147.9	167.8	187.7	205.6	224.9	251.6
Non-residential construction	133.1	149.5	163.3	176.2	187.1	202.3
Machinery and equipment	121.8	139.0	148.2	158.9	174.9	189.1
Exports of goods and services	152.2	168.6	173.9	187.3	203.1	241.9
Deduct: imports of goods and services	-134.3	-153.6	-155.4	-174.2	-197.6	-226.9
Gross national expenditure	132.1	146.3	160.5	171.7	182.7	200.7

23.20 Industry selling price index (manufacturing), 1960-79 (1971=100)

Year	Index	Year	Index	Year	Index	Year	Index
1960	82.2	1965	86.2	1970	98.1	1975	153.7
1961	82.4	1966	88.7	1971	100.0	1976	161.6
1962	83.3	1967	90.4	1972	104.5	1977	174.3
1963	84.4	1968	92.3	1973	116.2	1978	190.4
1964	85.1	1969	95.8	1974	138.3	1979	217.8P

23.21 Chemical and mineral process plant price indexes, 1972-79 (1971 = 100)

Year	Machinery and equipment	Field erection	Buildings	Engineering and administration	Total
1972	103.1	110.2	106.9	106.6	105.3
1973	108.7	120.2	117.1	113.4	112.5
1974	133.5	133.6	134.4	128.5	132.9
1975	160.8	153.7	147.9	148.4	155.9
1976	170.5	172.8	161.6	163.3	168.5
1977 ^r	182.3	192.4	175.6	174.8	181.9
1978	196.5	207.3	190.0	185.3	195.6
1979	219.8	221.3	212.7	202.5	216.4

23.22 Chemical and petrochemical plant price indexes, 1972-79 (1971 = 100)

Year	Machinery and equipment	Construction labour	Construction indirects	Buildings	Engineering design and administration	Total
1972	103.2	109.5	108.4	108.1	106.9	105.9
1973	108.8	120.3	118.8	118.0	113.9	113.6
1974	138.0	131.1	131.1	135.6	128.1	134.2
1975	169.4	153.0	150.9	151.1	146.8	158.9
1976	178.5	172.3	170.0	167.0	161.4	172.9
1977	188.8	192.1	189.3	182.1	172.8	186.4
1978	204.6	206.8	205.9	195.7	183.1	201.1
1979	230.1	218.3	220.3	215.7	199.3	221.0

23.23 Price indexes of residential and non-residential building materials and wage rates, 1968-79 (1971 = 100)

Year	Residential input indexes			Non-residential input indexes		
	Building materials	Labour	Total	Building materials	Labour	Total
1968	91.5	71.1	79.9	90.0	71.7	79.7
1969	96.4	76.5	85.1	94.0	77.2	84.5
1970	95.3	87.9	91.2	96.6	88.5	92.0
1971	100.0	100.0	100.0	100.0	100.0	100.0
1972	109.8	110.6	110.1	104.9	111.0	107.8
1973	124.0	121.8	123.2	113.1	122.3	117.5
1974	135.2	133.8 ^r	134.7	137.3	134.7	136.1
1975	139.7 ^r	151.6	144.0	147.0	154.1	150.4
1976	153.6 ^r	172.8 ^r	160.5	156.6	175.9	165.7
1977 ^r	165.2	193.9	175.5	165.6	195.4	179.7
1978	184.1	206.2	192.0	179.4	208.4	193.2
1979	206.9	219.5	211.4	208.6	221.3	214.6

23.24 New housing price indexes, for specified metropolitan areas, 1972-79 (1976 = 100)

Metropolitan area	1972	1973	1974	1975	1976	1977	1978	1979
St. John's (Nfld.)	...	...	...	...	100.0	101.3	101.7	106.0
Halifax	...	...	...	94.4	100.0	102.3	102.2	104.5
Quebec	...	...	...	...	100.0	111.4	119.8	129.6
Montreal	53.6	62.6	88.4	94.7	100.0	105.4	107.4	113.7
Ottawa-Hull	58.6	71.8	88.9	92.6	100.0	102.9	101.3	101.8
Toronto	60.9	76.2	95.0	94.6	100.0	99.7	99.8	99.2
Hamilton	...	...	...	...	100.0	102.8	103.9	104.2
St. Catharines-Niagara	...	...	...	92.9	100.0	108.5	113.7	116.7
Kitchener	...	...	...	96.9	100.0	100.8	102.6	102.6
London	...	...	...	94.5	100.0	105.2	109.5	117.2
Windsor	...	...	...	...	100.0	106.6	115.3	136.1
Thunder Bay	...	...	...	...	100.0	109.6	115.7	122.0
Winnipeg	52.7	64.3	81.8	88.8	100.0	106.0	109.7	111.9
Regina	...	...	...	84.9	100.0	99.7	99.1	101.9
Saskatoon	...	...	...	82.0	100.0	107.4	113.2	122.0
Calgary	45.3	52.0	66.8	80.4	100.0	106.9	115.5	123.2
Edmonton	44.4	53.9	70.3	83.5	100.0	106.9	114.3	123.0
Vancouver	54.6	67.0	81.9	93.3	100.0	98.7	98.0	100.3
Victoria	...	...	...	...	100.0	97.2	95.5	95.6
Canada	...	...	...	...	100.0	103.3	106.0	109.9

23.25 Construction wage rate indexes for selected cities, 1972-79, (basic wage rate) (1971 = 100)

City	1972	1973	1974	1975	1976	1977	1978	1979
St. John's (Nfld.)	114.6	133.7	158.8	192.4	233.3	259.7	277.0	289.9
Halifax	112.8	125.6	139.9	152.1	169.5	188.8	199.3	222.3
Saint John (NB)	114.7	131.6	152.8	169.1	186.9	204.3	215.8	235.2
Quebec	111.0	125.9	140.9	169.6	187.0	215.0	235.2	247.4
Chicoutimi	111.7	127.1	144.1	175.5	193.9	222.3	244.9	258.2
Montreal	104.7	113.6	123.9	147.8	163.2	185.7	203.3	214.0
Ottawa	114.0	127.0	137.8	153.4	176.1	194.4	204.5	218.5
Toronto	111.5	122.5	132.6	146.6	167.1	184.4	194.3	207.1
Hamilton	111.3	119.9	129.0	141.2	160.1	174.5	184.3	196.0
St. Catharines	115.1	126.4	135.1	149.0	174.7	192.2	201.6	213.6
Kitchener	112.4	123.0	131.5	144.1	163.7	180.0	189.3	201.9
London	119.7	131.5	138.1	151.9	174.2	192.7	202.8	216.1
Windsor	109.3	114.7	120.8	132.7	156.7	174.2	183.3	194.5
Sudbury	110.7	120.9	127.2	137.1	157.6	173.0	181.6	193.7
Thunder Bay	113.0	124.1	134.9	150.1	181.3	195.2	205.8	218.9
Winnipeg	111.7	122.5	133.8	153.3	185.7	212.3	221.3	237.5
Regina	105.5	122.0	140.2	173.5	203.2	224.1	236.3	252.0
Saskatoon	106.8	122.8	140.1	173.6	204.0	224.9	237.2	252.9
Calgary	111.7	125.1	139.9	159.6	188.0	209.2	222.0	235.6
Edmonton	111.8	126.3	140.3	161.0	190.2	211.0	224.6	237.6
Vancouver	108.7	116.3	131.7	154.8	175.6	191.5	204.2	216.0
Victoria	109.0	116.9	132.5	156.0	177.9	193.7	205.9	217.4
Total	110.4	121.2	132.8	151.4	173.1	192.3	204.7	217.4

23.26 Output price indexes of non-residential construction, for selected cities, (mid-1976 = 100)

Year and city	Office building	High school	Light industrial building
Montreal			
1972	65.3	64.9	58.4
1973	68.8	73.4	68.4
1974	80.5	89.5	89.6
1975	99.4	98.1	96.3
1976	99.9	101.1	100.0
1977	100.3	107.3	104.0
1978	106.0	109.2	105.1
1979	110.4	117.5	109.3
Ottawa			
1972	62.7	65.3	63.8
1973	68.1	81.2	77.4
1974	84.3	94.5	92.7
1975	94.9	98.6	94.0
1976	98.4	100.8	100.0
1977	101.9	105.4	101.3
1978	101.7	108.8	107.5
1979	110.0	119.1	120.2
Toronto			
1972	76.5	66.0	71.4
1973	81.3	78.6	81.5
1974	97.8	91.7	98.0
1975	104.2	97.9	102.8
1976	101.2	101.3	100.0
1977	98.1	106.6	100.7
1978	104.2	113.6	107.8
1979	111.6	129.0	119.9
Vancouver			
1972	54.8	64.5	61.4
1973	59.3	77.5	74.3
1974	77.6	90.9	91.5
1975	91.7	95.8	96.7
1976	98.1	102.6	100.0
1977	104.6	107.8	103.7
1978	108.8	117.5	110.0
1979	117.4	128.7	121.0

23.27 Highway construction price indexes (1971 = 100)

Province	Year ¹	0	1	2	3	4	5	6	7	8	9
Newfoundland	1950	...	...	...	...	...	...	77.3	65.0	74.0	67.5
	1960	70.8	56.8	61.9	57.4	61.5	67.8	73.6	65.4	68.6	66.1
	1970	82.6	100.0	101.1	109.6	129.0	128.0	111.3	127.4	141.6	...
Nova Scotia	1950	...	...	...	...	...	...	77.6	70.5	69.9	74.2
	1960	79.8	67.4	66.2	64.7	65.0	78.8	78.3	82.7	80.8	83.0
	1970	90.4	100.0	107.2	118.8	164.1	185.0	176.2	195.4	209.2	...
New Brunswick	1950	...	...	...	...	...	...	87.0	84.6	89.9	89.3
	1960	84.3	87.1	86.5	89.0	90.3	89.9	90.2	89.7	88.7	89.0
	1970	105.7	100.0	123.9	139.3	191.8	188.6	209.4	226.8	240.2	...
Quebec	1960	...	...	...	...	79.6	76.9	82.6	80.8	80.5	85.4
	1970	87.2	100.0	106.6	120.5	154.0	180.7	190.5	200.6	215.3	...
Ontario	1950	...	...	...	...	...	...	81.6	71.4	66.4	69.2
	1960	65.2	60.8	67.0	76.9	75.2	87.5	95.7	95.0	92.1	93.6
	1970	96.8	100.0	106.3	114.5	149.5	164.2	172.4	186.9	202.4	...
Manitoba	1950	...	...	...	...	...	...	83.3	93.4	69.8	68.7
	1960	72.9	62.6	67.6	75.3	77.5	83.5	95.7	96.3	88.2	90.5
	1970	100.9	100.0	111.3	126.3	166.8	172.5	197.6	204.7	226.0	...
Saskatchewan	1950	...	...	...	...	...	...	103.7	106.5	82.6	75.5
	1960	71.6	68.0	66.9	69.8	79.4	98.2	114.3	93.5	84.9	89.8
	1970	98.5	100.0	104.4	129.6	175.8	210.4	206.6	231.9	268.9	...
Alberta	1970	...	100.0	99.5	128.6	184.7	209.7	200.5	222.9	257.0	...
British Columbia	1950	...	...	...	...	...	...	102.4	95.4	80.3	82.1
	1960	81.8	71.9	68.5	69.7	76.3	91.9	93.3	85.9	91.1	103.0
	1970	96.7	100.0	95.7	101.6	170.2	183.2	213.2	215.3	214.2	...
Canada ²	1950	...	...	...	...	...	...	87.1	80.9	73.0	73.2
	1960	72.1	65.0	67.6	72.2	76.2	83.0	89.4	86.0	84.8	88.7
	1970	92.7	100.0	105.1	118.3	158.7	177.5	185.1	198.2	214.4	...

¹Within decade.²The Canada index includes seven provinces from 1956 to 1964, when Quebec was added, Alberta was included from 1971, Prince Edward Island was excluded throughout.**23.28 Purchase price indexes of secondary metals, 1972-79 (1971 = 100)**

Year	Non-ferrous scrap metal	Ferrous scrap metal
1972	93.5	94.3
1973	126.3	136.7
1974	166.5	261.0
1975	118.7	186.3
1976	138.0	187.3
1977	152.5	163.0
1978	175.6	187.3
1979P	242.5	250.8

23.29 Energy price indexes, 1972-79 (1971=100)

Year and type	Petroleum refineries	Thermal coal	Electric power over 5 000 K W	Electric power under 5 000 K W
Industrial price indexes				
1972	102.7	106.6	101.0	101.9
1973	107.5	114.9	107.1	105.1
1974	160.1	173.8	119.2	109.2
1975	184.5	246.4	131.6	122.7
1976	211.5	268.3	153.6	139.8
1977	246.7	288.0	200.4	160.1
1978	278.7	339.1	221.9	177.7
1979	325.7	368.1	243.2	194.2
	Gasoline	Fuel oil and other liquid fuel	Gas	Electricity
Retail price indexes				
1972	100.8	106.1	100.7	102.7
1973	107.6	122.8	102.4	111.0
1974	125.5	158.7	112.7	115.3
1975	142.0	180.2	136.2	128.6
1976	159.6	209.2	175.6	149.2
1977	173.4	241.6	198.7	174.6
1978	183.1	275.5	236.0	188.7
1979	201.8	309.8	248.9	205.1

23.30 Price indexes of electrical utility distribution systems, transmission lines, transformer stations, hydroelectric generating stations and steam electric generating stations, 1972-79 (1971 = 100)

Year	Distribution systems			Transmission lines	Transformer stations			Generating stations	
	Total direct costs	Equipment	Total		Support structures and fixtures	Equipment	Total	Hydro-electric	Steam electric
1972	103.6 ^r	99.7	104.4 ^r	106.1	108.1	101.2	103.5 ^r	106.3	106.1
1973	113.7 ^r	100.7	114.1 ^r	115.3	120.5	107.3	110.5 ^r	116.1	115.9
1974	138.6	125.7	137.5	137.7	148.8	134.9	135.3 ^r	137.9	139.6
1975	154.8 ^r	136.7	154.2 ^r	161.8 ^r	165.5 ^r	162.5	158.0 ^r	157.6	158.3 ^r
1976	162.6 ^r	126.5	163.1 ^r	173.7	182.1	172.2 ^r	169.1 ^r	171.6	174.1
1977 ^r	172.8	130.1	173.9	187.1	192.7	178.5	176.0	181.8	187.9
1978	185.7	138.2	186.8	202.1	206.5	193.2	189.4	195.8	204.2
1979	211.7	164.4	211.3	231.3	238.0	211.8	208.1	212.6	225.0

23.31 Selected industry selling price major group indexes (1971=100)

Type of industry	1972	1973	1974	1975	1976	1977	1978	1979 ^p
Food and beverage	108.7	131.3	155.0	170.9	173.7	185.9	205.6	231.7
Rubber and plastics	100.9	103.5	124.3	136.8	140.4	148.1	156.3	173.9
Leather	111.8	124.5	137.7	146.0	160.6	173.2	191.4	239.3
Textile	99.3	109.2	131.1	132.5	142.5	150.4	159.7	180.7
Knitting mills	97.7	102.7	118.9	119.6	125.2	132.2	139.7	153.7
Wood	122.2	151.9	149.1	151.3	167.9	188.7	225.3	260.8
Furniture and fixture	105.6	116.2	140.2	153.2	163.4	172.9	183.6	208.9
Paper and allied industries	100.9	112.1	151.6	178.4	182.8	193.5	204.2	239.6
Primary metal	102.2	117.5	147.7	160.8	169.9	190.5	207.8	258.7
Metal fabricating (excl. machinery and transportation equipment)	104.7	112.8	135.1	152.3	162.3	172.2	188.2	211.2
Electrical products	100.9	104.0	121.7	136.2	140.2	147.4	157.0	172.4
Non-metallic mineral products	104.1	109.0	124.9	147.3	163.2	177.6	192.3	210.0
Petroleum and coal products	102.7	117.2	159.4	183.7	210.2	244.5	275.4	321.8
Chemical and chemical products	101.4	106.5	137.1	160.3	167.2	175.9	189.3	214.8

23.32 Farm input price index total, 1968-79 (1971 = 100)

Year	East	West	Canada	Year	East	West	Canada
1968	91.4	92.4	91.8	1974	150.4	145.3	147.9
1969	94.2	95.8	94.9	1975	161.8	163.0	162.4
1970	96.6	96.4	96.5	1976	170.8	174.9	172.8
1971	100.0	100.0	100.0	1977	180.4	179.5	180.0
1972	105.0	107.0	106.0	1978	199.2	202.6	200.9
1973	128.1	125.0	126.5	1979 ^p	228.2	230.5	229.4

23.33 Summary of the Canadian balance of international payments between Canada and all non-residents, 1973-79 (million dollars)

Year	Current account balances			Capital account flows			Net errors and omissions	Allocation of SDRs	Net official monetary movement
	Merchandise	Non-merchandise	Balance	Long-term	Short-term	Net			
1973	+2,735	-2,627	+108	+628	-553	+75	-650	-	-467
1974	+1,689	-3,149	-1,460	+1,041	+1,310	+2,351	-867	-	+24
1975	-451	-4,306	-4,757	+3,935	+1,620	+5,555	-1,203	-	-405
1976 ^r	+1,388	-5,230	-3,842	+7,923	+99	+8,022	-3,658	-	+522
1977 ^r	+2,737	-7,036	-4,299	+4,388	+341	+4,729	-1,851	-	-1,421
1978	+3,382	-8,684	-5,302	+3,279	+461	+3,740	-1,737	-	-3,299
1979	+3,985	-9,004	-5,019	+3,210	+7,911	+11,121	-4,402	+219	+1,919

23.34 Canada's net official international monetary assets (IMF), 1977-79

Item	1977	1978	1979
US \$'000,000			
CANADIAN ASSETS			
Official holdings of foreign exchange:			
United States dollars	2,299	2,463	1,864
Other convertible currencies	16	18	24
Monetary gold ¹	935	1,009	1,022
Special Drawing Right (SDR) ¹	505	519	586
Reserve position in IMF ¹	852	557	391
Total, official international reserves ²	4,607	4,566	3,887
CANADIAN LIABILITIES			
Use of IMF credit ³	--	--	--
Foreign exchange deposit liabilities	--	2,700	300
Reported use of central bank reciprocal credit facilities	--	--	--
Total, official monetary liabilities	--	2,700	300
Net official monetary assets	4,607	1,866	3,587
Change in net official monetary assets	-1,236	-2,741	+1,721
Canadian \$'000,000			
Net official monetary assets	5,040	2,213	4,184
Change in net official monetary assets	-854	-2,827	+1,971
Change due to:			
Valuation adjustments ⁴	+567 ⁵	+472	+52
Transactions	-1,421 ⁵	-3,299	+1,919
Net official monetary movements ⁶			
Total, official international reserves	-1,421	-184	-847
Total, official monetary liabilities	--	-3,115	+2,766

¹From July 1, 1974 the basis of valuation for Canada's gold-based assets was changed from US\$42.22 per ounce of fine gold to a formal link with a basket of 16 currencies as calculated by the IMF and thus became SDR-based.

²As published by the finance minister.

³Represents transactions with the IMF when that institution holds Canadian dollars in excess of 100% of Canada's quota.

⁴Valuation adjustments represent changes in the external value of the Canadian dollar in relation to gold, the SDR, the United States dollar and other convertible currencies.

⁵Includes revaluation from book value to market value of gold transferred from the reserves for coin programs.

⁶Excludes valuation adjustments.

23.35 Canadian balance of international payments, by area, 1978 and 1979 (million dollars)

Item	United States		United Kingdom		Other non-residents		All non-residents	
	1978	1979	1978	1979	1978	1979	1978	1979
CURRENT ACCOUNT								
Current receipts								
Merchandise exports (adjusted)	37,101	44,703	1,986	2,507	13,424	17,953	52,511	65,163
Service receipts								
Travel	1,650	1,870	173	250	555	746	2,378	2,866
Interest and dividends	492	540	31	129	560	368	1,083	1,037
Freight and shipping	1,300	1,474	212	249	1,105	1,349	2,617	3,072
Other service receipts	1,461	1,596	456	445	1,790	2,233	3,707	4,274
Total, service receipts	4,903	5,480	872	1,073	4,010	4,696	9,785	11,249
Total, exports of goods and services	42,004	50,183	2,858	3,580	17,434	22,649	62,296	76,412
Transfer receipts								
Inheritances and immigrants' funds	105	110	98	142	413	518	616	770
Personal and institutional remittances	233	247	60	68	90	102	383	417
Withholding tax	--	--	--	--	--	--	582	754
Total, current receipts	42,342	50,540	3,016	3,790	17,937	23,269	63,877	78,353
Current payments								
Merchandise imports (adjusted)	34,884	44,489	1,607	1,877	12,638	14,812	49,129	61,178
Service payments								
Travel	2,553	2,451	371	374	1,160	1,138	4,084	3,963
Interest and dividends	4,049	4,545	237	269	1,190	1,434	5,476	6,248
Freight and shipping	1,469	1,749	203	232	880	992	2,552	2,973
Other service payments	3,887	4,656	376	442	1,555	1,837	5,818	6,935
Withholding tax	--	--	--	--	--	--	582	754
Total, service payments	11,958	13,401	1,187	1,317	4,785	5,401	18,512	20,873
Total, imports of goods and services	46,842	57,890	2,794	3,194	17,423	20,213	67,641	82,051
Transfer payments								
Inheritances and emigrants' funds	135	145	31	33	73	79	239	257
Personal and institutional remittances	133	144	44	48	212	225	389	417
Official contributions	--	--	--	--	910	647	910	647
Total, current payments	47,110	58,179	2,869	3,275	18,618	21,164	69,179	83,372

23.35 Canadian balance of international payments, by area, 1978 and 1979 (million dollars) (concluded)

Item	United States		United Kingdom		Other non-residents		All non-residents	
	1978	1979	1978	1979	1978	1979	1978	1979
CURRENT ACCOUNT (concluded)								
Current account balance								
Merchandise trade	+2,217	+214	+379	+630	+786	+3,141	+3,382	+3,985
Service transactions	-7,055	-7,921	-315	-244	-775	-705	-8,727	-9,624
Net transfers	+70	+68	+83	+129	-692	-331	+43	+620
Total, current account balance	-4,768	-7,639	+147	+515	-681	+2,105	-5,302	-5,019
CAPITAL ACCOUNT								
Direct investment								
In Canada	-350	+637	-23	+73	+248	+25	-125	+735
Abroad	-931	-877	-34	-146	-1,045	-832	-2,010	-1,855
Portfolio transactions								
Canadian securities								
Outstanding bonds	+86	+19	+30	+97	-81	+347	+35	+463
Outstanding stocks	-240	+556	-88	-97	-68	-99	-396	+360
New issues	+4,380	+2,551	+135	+135	+2,076	+2,418	+6,591	+5,104
Retirements	-689	-872	-90	-125	-412	-722	-1,191	-1,719
Foreign securities								
Outstanding issues	+61	-275	-32	-8	+15	+7	+44	-276
New issues	-1	-290	-	-1	-20	-21	-21	-312
Retirements	+7	+8	-	-	+12	+38	+19	+46
Loans and subscriptions, Government of Canada								
Advances	-	-	-	-	-510	-549	-510	-549
Repayments	-	-	+24	+24	+238	+9	+262	+33
Export credits directly or indirectly at risk of the Government of Canada	+13	-159	+32	+15	-853	-636	-808	-780
Other long-term capital transactions	+520	+633	+101	-81	+768	+1,408	+1,389	+1,960
Balance of capital movements in long-term forms	+2,856	+1,931	+55	-114	+368	+1,393	+3,279	+3,210
Resident holdings of foreign currencies:								
Chartered bank net foreign currency position with non-residents	+2,086	+1,836	+145	+2,097	+540	+155	+2,771	+4,088
Non-bank holdings of foreign currencies abroad	-256	+108	-19	+267	-272	+9	-547	+384
Non-resident holdings of Canadian:								
Dollar deposits	+156	+143	+4	+88	-127	+276	+33	+507
Government demand liabilities	-	-	-	-	+54	+214	+54	+214
Treasury bills	-3	-27	-59	-24	+9	-133	-53	-184
Commercial paper	-233	+160	+4	-4	+7	-12	-222	+144
Finance company paper	+120	+143	+5	-7	+3	-10	+128	+126
Other short-term paper	+151	+386	+3	-9	-4	+85	+150	+462
Other finance company obligations	-13	+6	-20	-6	+25	-25	-8	-25
Other short-term capital transactions	-370	+842	+71	-252	-1,546	+1,605	-1,845	+2,195
Balance of capital movements in short-term forms	+1,638	+3,597	+134	+2,150	-1,311	+2,164	+461	+7,911
Total, net capital balance	+4,494	+5,528	+189	+2,036	-943	+3,557	+3,740	+11,121
Total, current and capital account balance	-274	-2,111	+336	+2,551	-1,624	+5,662	-1,562	+6,102
Net errors and omissions								
Balance settled by interarea transfers	-686	..	-341	..	-710	..	-1,737	-4,402
Allocation of Special Drawing Rights	..	..	..	..	-	+219	-	+219
Net official monetary movements								
Official international reserves	+197	..	-	..	-381	..	-184	-847
Official monetary liabilities	-1,157	..	-5	..	-1,953	..	-3,115	+2,766
Net official monetary movements	-960	..	-5	..	-2,334	..	-3,299	+1,919

23.36 Canadian balance of international indebtedness, selected years, 1939-76 (billion dollars)

Item	1939	1950	1960	1970 ^r	1974 ^r	1975 ^r	1976
CANADIAN ASSETS							
Direct investment	0.7	1.0	2.5	6.2	9.2	10.5	11.5
Portfolio investment	0.7	0.6	1.3	2.8	3.9	4.3	4.6
Miscellaneous investment ¹	-	-	-	1.0	3.1	3.7	4.0
Government of Canada credits ²	-	2.0	1.5	1.5	2.0	2.3	2.6
Government of Canada subscriptions to international financial agencies	-	0.1	0.1	0.3	0.6	0.7	0.8
Total, Canadian long-term investment abroad	1.4	3.7	5.3	11.8	18.8	21.5	23.5
Net official monetary assets	0.5	2.0	2.0	4.7	5.8	5.4	5.9
Other Canadian short-term holdings of foreign exchange	-	0.1	1.2	3.6	2.7	2.5	3.9
Gross assets ³	1.9	5.7	8.5	20.1	27.3	29.4	33.3
Net official monetary assets	0.5	2.0	2.0	4.7	5.8	5.4	5.9
United States ^{3,4}	0.9	1.2	3.7	8.6	8.2	8.1	9.7
United Kingdom ^{3,4}	0.1	1.6	1.5	4.1	4.7	5.4	5.5
Other countries ^{3,4}	0.4	0.9	1.3	2.6	8.6	10.5	12.2
Short-term receivables (not included elsewhere) ³	..	0.2	0.5	1.9	4.3	4.4	4.7
Net errors and omissions	..	-	-	1.6	6.0	7.2	10.8
Gross assets	1.9	5.9	8.9	23.6	37.6	41.0	48.8

**23.36 Canadian balance of international indebtedness, selected years, 1939-76 (billion dollars)
(concluded)**

Item	1939	1950	1960	1970 ^r	1974 ^r	1975 ^r	1976
CANADIAN LIABILITIES							
Direct investment	2.3	4.0	12.9	26.4	36.2	40.0	43.1
Government bonds	1.7	2.0	3.3	7.9	11.5	15.2	20.6
Other portfolio investment	2.6	2.4	4.6	6.9	9.2	10.1	13.5
Miscellaneous investment	0.3	0.3	1.4	2.9	3.5	3.6	4.2
Total, foreign long-term investment in Canada	6.9	8.7	22.2	44.0	60.4	68.9	81.4
Non-resident equity in Canadian assets abroad	0.2	0.3	1.1	2.7	3.4	3.7	3.9
Official Special Drawing Right liabilities	...	...	...	0.1	0.4	0.4	0.4
Total, long-term liabilities	7.1	9.0	23.3	46.9	64.2	73.0	85.7
Non-resident holdings of Canadian dollars	0.3	0.6	0.6	0.8	2.0	2.6	3.2
Gross liabilities ^a	7.4	9.6	24.0	47.7	66.2	75.6	88.9
United States ^a	4.5	7.1	18.0	37.4	49.9	56.3	64.0
United Kingdom ^a	2.6	2.0	3.5	4.3	5.8	6.2	7.2
Other countries ^a	0.3	0.5	2.4	6.0	10.5	13.1	17.7
Short-term payables (not included elsewhere) ^{a,7}	}						
Finance company obligations							
Other							
Net errors and omissions	...	0.3	0.5	—	—	—	—
Gross liabilities	7.4 ^a	10.4	25.6	51.8	72.7	83.0	97.3
CANADA'S INTERNATIONAL INDEBTEDNESS							
Canadian net international indebtedness	5.5 ^a	4.5	16.6	28.2	35.1	42.0	48.5
Net official monetary assets	-0.5	-2.0	-2.0	-4.7	-5.8	-5.4	-5.9
United States	3.6	5.9	14.3	28.9	41.7	48.2	54.3
United Kingdom	2.5	0.4	2.0	0.2	1.1	0.8	1.7
Other countries	-0.1	-0.4	1.1	3.3	1.9	2.6	5.5
Short term (not included elsewhere) ^a	...	0.6	1.1	0.5	-3.8	-4.2	-7.1

¹Includes export credits by government and private sectors less reserve against government inactive assets.

²Includes medium-term non-marketable United States government securities held under the Columbia River Treaty arrangements since 1964.

³Excludes short-term receivables and payables, and net errors and omissions.

⁴Excludes net official monetary assets.

⁵Country distribution not available.

⁶Includes international financial agencies.

⁷At the end of 1964 about \$450 million previously classified as long-term investment was reclassified to short-term finance company obligations.

^aIncludes net errors and omissions.

23.37 Canadian long-term investment abroad¹, by country and by type of investment, selected years, 1951-76 (million dollars)

Location and type of investment	1951	1960	1970	1974 ^r	1975	1976
United States						
Direct investment	912	1,618	3,262	4,769	5,559	6,092
Portfolio investment						
Stocks	289	827	2,115	2,765	3,030	3,345
Bonds	87	120	224	202	217	210
Miscellaneous investment	9	18	234	493	556	560
Government of Canada credits ^a	—	—	26	—	—	—
Government of Canada subscriptions to international investment agencies	—	—	—	—	—	—
Total, United States	1,297	2,583	5,861	8,229	9,362	10,207
United Kingdom						
Direct investment	74	257	586	904	1,019	1,037
Portfolio investment						
Stocks	17	26	60	90	85	70
Bonds	17	16	20	34	48	39
Miscellaneous investment	13	18	74	219	256	241
Government of Canada credits ^a	1,394	1,092	1,017	932	909	924
Government of Canada subscriptions to international investment agencies	—	—	—	—	—	—
Total, United Kingdom	1,515	1,409	1,757	2,179	2,317	2,311
Other countries						
Direct investment	180	592	2,340	3,537	3,948	4,372
Portfolio investment						
Stocks	161	197	170	395	425	475
Bonds	38	129	230	438	467	453
Miscellaneous investment	-80	-54	669	2,377	2,890	3,235
Government of Canada credits ^a	528	370	447	1,123	1,403	1,706
Government of Canada subscriptions to international investment agencies	66	85	268	583	663	753
Total, other countries ^a	893	1,319	4,124	8,453	9,796	10,994

23.37 Canadian long-term investment abroad¹, by country and by type of investment, selected years, 1951-76 (million dollars) (concluded)

Location and type of investment	1951	1960	1970	1974 ^r	1975	1976
All countries						
Direct investment	1,166	2,467	6,188	9,210	10,526	11,501
Portfolio investment						
Stocks	467	1,050	2,345	3,250	3,540	3,890
Bonds	142	265	474	674	732	702
Miscellaneous investment	-58	-18	977	3,089	3,702	4,036
Government of Canada credits ⁴	1,922	1,462	1,490	2,055	2,312	2,630
Government of Canada subscriptions to international investment agencies	66	85	268	583	663	753
Total, all countries	3,705	5,311	11,742	18,861	21,475	23,512

¹Figures include the equity of non-residents in assets abroad of Canadian companies, but exclude investment of insurance companies and banks (held mainly, against liabilities to non-residents).

²Medium-term non-marketable United States government securities acquired under the Columbia River Treaty arrangements are shown from 1964.

³Includes deferred interest on the United Kingdom 1946 loan agreement starting from 1956 and amounting to \$116 million in 1976.

⁴Includes United Nations bonds from 1962, which amounted to \$3 million in 1976.

⁵Includes other Commonwealth countries.

23.38 Foreign long-term investment in Canada, by type of investment and by country, as at Dec. 31, 1975 and 1976 (million dollars)

Year and type of investment	United States ¹	United Kingdom	Other countries	Total investments of non-residents
1975 ^r				
Government securities				
Government of Canada	285	99	360	744
Provincial	9,313	305	2,773	12,391
Municipal	1,473	51	560	2,084
Total, government securities	11,071	455	3,693	15,219
Manufacturing				
Vegetable products	1,715	197	161	2,073
Animal products	364	8	48	420
Textiles	336	83	17	436
Wood and paper products	2,881	308	491	3,680
Iron and products	5,069	250	193	5,512
Non-ferrous metals	2,057	122	139	2,318
Non-metallic minerals	495	119	315	929
Chemicals and allied products	2,255	288	133	2,676
Miscellaneous manufactures	368	3	9	380
Total, manufacturing	15,540	1,378	1,506	18,424
Petroleum and natural gas	8,597	981	1,234	10,812
Other mining and smelting	4,414	368	719	5,501
Utilities				
Railways	566	326	115	1,007
Other (excl. public enterprises)	1,878	99	115	2,092
Total, public utilities	2,444	425	230	3,099
Merchandising	2,263	411	326	3,000
Financial	4,880	1,291	1,414	7,585
Other enterprises	1,325	168	197	1,690
Miscellaneous investments	2,423	175	955	3,553
Total, investments, 1975 ^r	52,957	5,652	10,274	68,883
1976				
Government securities				
Government of Canada	252	176	661	1,089
Provincial	12,555	317	3,912	16,784
Municipal	1,942	56	736	2,734
Total, government securities	14,749	549	5,309	20,607
Manufacturing				
Vegetable products	1,779	230	272	2,281
Animal products	352	10	41	403
Textiles	363	87	16	466
Wood and paper products	3,267	334	576	4,177
Iron and products	5,630	251	243	6,124
Non-ferrous metals	2,014	146	222	2,382
Non-metallic minerals	552	126	329	1,007
Chemicals and allied products	2,566	318	374	3,258
Miscellaneous manufactures	400	4	12	416
Total, manufacturing	16,923	1,506	2,085	20,514

23.38 Foreign long-term investment in Canada, by type of investment and by country, as at Dec. 31, 1975 and 1976 (million dollars) (concluded)

Year and type of investment	United States ¹	United Kingdom	Other countries	Total investments of non-residents
Petroleum and natural gas	9,355	1,042	1,380	11,777
Other mining and smelting	4,680	434	829	5,943
Utilities				
Railways	715	322	201	1,238
Other (excl. public enterprises)	2,188	99	208	2,495
Total, public utilities	2,903	421	409	3,733
Merchandising	2,481	429	397	3,307
Financial	5,380	1,519	2,519	9,418
Other enterprises	1,470	194	247	1,911
Miscellaneous investments	2,581	198	1,377	4,156
Total, investments, 1976	60,522	6,292	14,552	81,366

Common and preference stocks are included at book (equity) values as shown in the balance sheets of the issuing companies; bonds and debentures are valued at par; long-term liabilities in foreign currencies being expressed in Canadian dollars at the rate of \$1.00 US = \$1.00 Canadian for liabilities denominated in US dollars and at exchange rates current at the time of issue for other foreign pay liabilities.

23.39 Price of the United States dollar in Canada, by month, 1973-79 (Canadian cents per US dollar)

Month	1973	1974	1975	1976	1977	1978	1979
January	99.91	99.14	99.48	100.64	101.09	110.11	118.98
February	99.55	97.67	100.05	99.37	102.79	111.32	119.55
March	99.66	97.20	100.03	98.58	105.11	112.56	117.39
April	100.06	96.73	101.11	98.33	105.11	114.16	114.63
May	100.05	96.21	102.81	98.00	104.85	111.89	115.56
June	99.83	96.64	102.64	97.36	105.75	112.16	117.23
July	99.94	97.61	103.07	97.22	106.10	112.45	116.34
August	100.38	97.98	103.53	98.53	107.49	114.03	117.06
September	100.81	98.63	102.62	97.50	107.33	116.63	116.52
October	100.09	98.30	102.50	97.26	109.88	118.27	117.53
November	99.88	98.72	101.37	98.57	110.92	117.28	117.96
December	99.94	98.81	101.38	101.87	109.72	117.95	116.96
Annual average	100.01	97.80	101.73	98.61	106.35	114.02	117.15

Rates published by Bank of Canada. Noon average market for business days in period.

23.40 Foreign exchange rates, 1975-79

Year	Canadian dollar				Premium (+) or discount (—) on forward US\$ ^a	
	Vis-à-vis United States dollar ^a					
	Spot rates (US cents)					
	High	Low	Close	Noon average		
1975	100.95	96.15	98.43	98.30	+0.96	
1976	103.89	95.88	99.13	101.41	+3.95	
1977	99.85	89.63	91.41	94.03	+1.53	
1978	91.70	83.63	84.33	87.70	+0.06	
1979	87.78	83.20	85.72	85.36	—0.13	
	Vis-à-vis other currencies ^a					
	Spot rates (foreign currencies)					
	Pound sterling	French franc	Deutsche mark	Swiss franc	Japanese yen	SDR ^a
1975	0.44	4.21	2.41	2.54	291.55	0.81
1976	0.56	4.84	2.55	2.53	300.57	0.88
1977	0.54	4.62	2.18	2.25	251.26	0.81
1978	0.46	3.96	1.76	1.57	184.82	0.70
1979	0.40	3.63	1.57	1.42	187.05	0.66

¹Calculated on the basis of rates prevailing on the interbank market in Canada.

²Rates per annum, computed on basis of average 90-day forward spread on the spot noon rates.

³Calculated on the basis of average spot rates based (except for SDRs) on nominal quotation in terms of United States dollars.

23.41 Intercity indexes of retail price differentials for selected commodities and services, 1978 and 1979 (combined city average = 100)

Commodity grouping	City										
	St. John's, Nfld.	Charlottetown, PEI	Halifax, NS	Saint John, NB	Montreal, Que.	Ottawa, Ont.	Toronto, Ont.	Winnipeg, Man.	Regina, Sask.	Edmonton, Alta.	Vancouver, BC
As at September 1978											
Food at home	115	107	105	107	98	98	98	105	103	103	108
Household operation ¹	101	97	102	98	104	99	97	94	95	99	107
Transportation	103	102	99	102	106	98	100	93	96	93	101
Health and personal care	100	95	95	95	97	101	104	96	93	101	105
Recreation, education and reading	96	90	97	97	105	96	100	93	96	94	98
Tobacco and alcohol	116	101	100	104	103	100	99	99	104	88	100
As at September 1979											
Food at home	117	107	103	106	98	99	100	102	105	103	107
Household operation ¹	107	96	101	102	103	99	99	94	95	97	103
Transportation	104	97	97	101	105	100	100	94	93	93	99
Health and personal care	100	90	95	101	98	102	107	94	92	97	104
Recreation, education and reading	106	99	105	100	102	101	101	98	100	98	100
Tobacco and alcohol	115	100	104	104	105	100	99	99	104	87	98

¹Excludes fuel and utilities.

23.42 Summary of the financial market, 1978 and 1979 (million dollars)

Category	1978			1979			1979			Total
	Jan. 1- Mar. 31	Apr. 1- June 30	July 1- Sept. 30	Oct. 1- Dec. 31	Total	Jan. 1- Mar. 31	Apr. 1- June 30	July 1- Sept. 30	Oct. 1- Dec. 31	
Funds raised in credit markets										
Persons and unincorporated business	4,116	4,628	6,507	6,555	21,806	7,594	6,287	7,015	9,504	30,400
Consumer credit	513	1,697	1,182	1,063	4,455	596	2,274	1,273	776	4,919
Bank loans	849	-850	1,109	320	1,428	2,545	1,216	808	3,290	7,859
Other loans	-53	393	187	89	616	1,070	-671	365	1,478	2,242
Short-term paper	9	5	-3	-10	1	7	8	-	-3	12
Mortgages	2,806	3,384	4,046	5,116	15,352	3,364	3,465	4,570	3,971	15,370
Bonds	-8	-1	-14	-23	-46	12	-5	-1	-8	-2
Non-financial private corporations										
Bank loans	2,413	4,648	1,424	4,420	12,905	2,470	5,738	3,570	3,061	14,839
Other loans	884	1,890	133	995	3,902	1,043	3,072	521	527	5,163
Short-term paper	376	57	-272	763	924	740	431	740	494	2,041
Mortgages	78	31	366	2	477	49	310	608	27	994
Bonds	229	857	144	27	1,257	-218	318	615	155	870
Stocks	434	429	237	463	1,563	13	28	309	161	511
Non-financial government enterprises										
Bank loans	1,128	1,117	1,438	2,287	5,970	1,200	1,400	704	441	3,745
Other loans	-84	-250	89	-99	-344	354	27	-423	-3	65
Short-term paper	-16	159	497	458	1,114	124	185	119	3	431
Mortgages	29	19	17	40	18	18	1	170	-	189
Bonds	563	1,210	769	19	2,898	689	6	5	1	34
Stocks	636	-16	67	1,513	2,200	-7	-30	-4	811	3,018

23.42 Summary of the financial market, 1978 and 1979 (million dollars) (concluded)

Category	1978		1979		Total		1979		Total	
	Jan. 1- Mar. 31	Apr. 1- June 30	July 1- Sept. 30	Oct. 1- Dec. 31	Jan. 1- Mar. 31	Apr. 1- June 30	July 1- Sept. 30	Oct. 1- Dec. 31	Jan. 1- Mar. 31	Apr. 1- June 30
General government	3,448	4,934	3,268	7,266	18,916	4,069	1,621	3,442	8,373	8,373
Bank loans	846	200	115	499	1,660	-355	-730	-216	-1,000	-1,000
Other loans	301	170	1,124	716	2,311	751	-13	118	-545	-545
Treasury bills	980	655	820	365	2,820	400	525	725	2,125	2,125
Short-term paper	95	216	-2	-63	246	36	-60	-16	-225	-225
Mortgages	-13	-12	-13	-13	-51	-185	-13	-13	-51	-51
Bonds	1,239	3,705	1,224	5,762	11,930	1,094	881	2,844	8,069	8,069
Total borrowing by domestic non-financial sectors	11,105	15,327	12,637	20,528	59,597	15,333	12,910	16,448	57,357	57,357
Rest of the world	10	382	756	342	1,490	573	515	1,174	2,846	2,846
Bank loans	-9	162	190	343	704	249	198	401	1,022	1,022
Other loans	61	301	487	347	1,196	220	225	518	1,248	1,248
Mortgages	-	-	-	-	-	2	7	1	31	31
Stocks	-42	-81	79	-5	-49	102	87	254	545	545
Total borrowing, excluding domestic financial institutions	11,115	15,709	13,393	20,870	61,087	15,906	13,425	17,622	60,203	60,203
Domestic financial institutions	364	2,439	296	2,958	6,057	1,425	665	2,725	7,804	7,804
Bank loans	-422	640	646	1,811	240	-154	245	344	1,550	1,550
Other loans	-137	367	425	181	836	-65	47	162	622	622
Short-term paper	69	254	14	1,469	1,806	669	-437	1,431	2,049	2,049
Mortgages	-14	-9	-13	-18	-54	41	29	-12	65	65
Bonds	530	530	226	145	1,431	627	517	112	1,917	1,917
Stocks	338	657	268	535	1,798	307	264	688	1,601	1,601
Total funds raised	11,479	18,148	13,689	23,828	67,144	17,331	14,090	20,347	68,007	68,007
Funds supplied directly to credit markets										
Persons and unincorporated businesses	934	1,881	995	3,821	7,631	697	1,109	5,473	7,676	7,676
Non-financial private enterprises	68	656	-108	1,527	2,143	326	563	521	2,166	2,166
Public sector (general government and non-financial government enterprises)	507	707	841	1,835	3,890	1,525	-306	1,146	2,922	2,922
Public financial institutions	490	708	595	725	2,518	-68	880	688	2,124	2,124
Rest of the world	756	3,142	1,972	2,041	7,911	3,404	1,432	472	5,390	5,390
Bank of Canada	-488	1,465	15	15	643	-609	1,043	472	1,551	1,551
Chartered banks	3,903	5,326	3,900	7,240	20,369	4,753	4,133	4,634	21,136	21,136
Private domestic financial institutions (excl. chartered banks)	4,317	6,216	4,029	6,624	21,186	6,051	5,489	6,638	25,042	25,042
Total funds supplied	11,479	18,148	13,689	23,828	67,144	17,331	14,090	20,347	68,007	68,007

23.43 Book value, ownership and control of capital employed¹ in non-financial industries, 1971-77

Item and year	Ownership				Control				Percentage of capital employed controlled in				Total capital employed \$ billion
	Investment owned in				Investment controlled in				Percentage of capital employed controlled in				
	Canada \$ billion	United States \$ billion	Other countries \$ billion	%	Canada \$ billion	United States \$ billion	Other countries \$ billion	%	Canada %	United States %	Other countries %		
Manufacturing													
1971	12.7	11.7	2.3	47	11.2	11.7	3.8	42	44	44	14	26.7	
1972	13.4 ^r	12.5	2.5 ^r	47	11.8	12.5	4.2	41	44	44	15	28.4	
1973	14.7	13.7	2.9 ^r	44	13.1	13.6	4.6	42	43	43	15	31.3	
1974	16.9 ^r	15.3	3.1	48	15.1 ^r	15.2	5.0	43	43	43	14	35.3 ^r	
1975 ^r	20.3	17.0	3.4	50	18.1	17.2	5.5	44	42	44	14	40.7	
1976 ^{a,e}	..	..	..	..	..	..	..	45 ^r	42 ^r	42 ^r	13 ^r	..
1977 ^{a,e}	..	..	..	..	..	..	..	45	42	42	13	..
Petroleum and natural gas													
1971	5.6	6.5	1.5	41	3.1 ^r	8.3	2.2	23	61	61	16	13.6	
1972	6.4	6.8	1.7	43	3.9	8.6	2.4	26	58	58	16	15.0	
1973	6.9	7.6	1.9	42	4.1	9.6	2.7	25	59	59	16	16.4	
1974	7.7	8.0	2.1	43	4.5 ^r	10.5	2.8	25	59	59	16	17.7	
1975 ^r	9.0	8.6	2.2	46	5.1	11.8	2.9	26	59	59	15	19.8	
1976 ^{a,e}	..	..	..	..	..	..	..	31 ^r	55 ^r	14 ^r	..	..
1977 ^{a,e}	..	..	..	..	..	..	..	35	51	14	..	..
Other mining and smelting													
1971	3.1	3.4	0.7	43	2.1	4.3	0.8	29	59	59	12	7.2	
1972	3.4	3.6	0.7	45	3.2 ^r	3.6	0.8	43	47	47	10	7.7	
1973	3.8	3.8	0.8	45	3.7	3.8	0.9	44	45	45	11	8.4	
1974	3.9	4.1	1.0	44 ^r	3.8	4.1	1.2	42	45	45	13	9.0	
1975 ^r	4.0	4.4	1.1	42	3.8	4.4	1.3	40	46	46	14	9.5	
1976 ^{a,e}	..	..	..	..	..	..	..	43	44	43	13	..
1977 ^{a,e}	..	..	..	..	..	..	..	44	43	43	13	..
Railways													
1971	5.1	0.4	0.5	85	6.0 ^r	0.1	..	98	2	2	..	6.0	
1972	5.1	0.4	0.5	85	5.9	0.1	..	98	2	2	..	6.0	
1973	5.2	0.4	0.5	85	6.0	0.1	..	98	2	2	..	6.1	
1974	5.3	0.5	0.5 ^r	84	6.2	0.1	..	98 ^r	2 ^r	..	..	6.3
1975 ^r	6.0	0.6	0.5	85	7.0	0.1	..	99	1	1	..	7.1	
1976 ^{a,e}	..	..	..	..	..	..	..	99	1	1	..	..
1977 ^{a,e}	..	..	..	..	..	..	..	99	1	1	..	..
Other utilities													
1971	19.2	3.9 ^a	0.5	81	21.9	1.0	0.7	93	4	4	3	23.6	
1972	21.0	4.2	0.7	81	23.9	1.2	0.8	92	5	5	3	25.9	
1973	23.0	4.6	0.8	81	26.3 ^r	1.2	0.9	93	4	4	3	28.5	
1974	25.9 ^r	5.2	1.3 ^r	80	31.1	1.3	0.1	96	4	4	..	32.4	
1975 ^r	29.0	6.5	1.9	77	35.9	1.5	0.1	96	4	4	..	37.4	
1976 ^{a,e}	..	..	..	..	..	..	..	96	4	4	..	..
1977 ^{a,e}	..	..	..	..	..	..	..	96	4	4	..	..

23.43 Book value, ownership and control of capital employed¹ in non-financial industries, 1971-77 (concluded)

Item and year	Ownership						Control						Total capital employed \$ billion
	Investment owned in			Percentage of capital employed owned in			Investment controlled in			Percentage of capital employed controlled in			
	Canada \$ billion	United States \$ billion	Other countries \$ billion	Canada %	United States %	Other countries %	Canada \$ billion	United States \$ billion	Other countries \$ billion	Canada %	United States %	Other countries %	
Total ¹													
1971	64.6	27.3	6.2	66	28	6	62.7r	26.9	8.5	64	27	9	98.0
1972	69.2	29.0	6.7r	66	28	6	68.5r	27.6	8.9	65	26	9	104.9
1973	76.6r	32.0	7.4r	66	28	6	76.1r	30.1	9.8	66	26	8	116.0r
1974	86.0	35.1r	8.6r	66	27	7	86.7r	33.3	9.9	67	26r	7r	129.7
1975r	98.1	39.4	9.8	67	27	6	99.2	37.4	10.7	67	26	7	147.3
1976 ^{a,e}	..	..	..	..	..	..	..	..	..	68r	25	7r	..
1977 ^{a,e}	..	..	..	..	..	..	..	..	..	69	25	7	..

¹The book value of long-term debt and equity (including retained earnings) employed in enterprises in Canada.²Ratios for 1976 and 1977 are projections based on the adjustment of 1975 data to reflect subsequent major identified changes.³Includes data for merchandising and construction.

Sources

23.1 - 23.9 Gross National Product Division, Economic Statistics Field, Statistics Canada.

23.10 - 23.13 Industry Product Division, Economic Statistics Field, Statistics Canada.

23.14 Input-Output Division, Economic Statistics Field, Statistics Canada.

23.15 - 23.32 Prices Division, Economic Statistics Field, Statistics Canada.

23.33 - 23.39 Balance of Payments Division, Economic Statistics Field, Statistics Canada.

23.40 Bank of Canada.

23.41 Prices Division, Economic Statistics Field, Statistics Canada.

23.42 Financial Flows and Multinational Enterprises Division, Economic Statistics Field, Statistics Canada.

23.43 Balance of Payments Division, Economic Statistics Field, Statistics Canada.

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Government organizations and related agencies

Appendix 1

The following is a list of government departments, commissions, corporations, boards and other agencies as of May 1980, with the orders-in-council by which they were established or citations from the Statutes of Canada (SC) or the Revised Statutes of Canada (RSC). Organizational functions and the responsible ministers are also included. Legal titles are used to identify the organizations with some titles of the federal identity program included in brackets.

Agricultural Products Board. This board was established under authority of the Emergency Powers Act by order-in-council PC 3415 in 1951 to administer contracts with other countries to buy or sell agricultural products, and to carry out other commodity operations considered necessary or desirable for Canada's needs and requirements. The board was re-established under the Agricultural Products Board Act in 1952 and operates now under RSC 1970, c.A-5. Under the act the minister may require any staff of the agriculture department to provide services for the board.

Agricultural Stabilization Board. Established in 1958 as a Crown corporation under the Agricultural Stabilization Act (RSC 1970, c.A-9), the board is empowered to stabilize prices of agricultural products both to assist the industry in realizing fair returns for labour and investment and to maintain a fair relationship between the prices received by farmers and the costs of goods and services that they buy. The act was amended in July 1975 to provide for a revised list of named commodities and to update the formula used to calculate the prescribed prices at which support is provided under the act. Programs under the act are administered by board staff with assistance from the agriculture department. The board reports to Parliament through the minister of agriculture.

Agriculture, Department of (Agriculture Canada). This department was established in 1867 and now operates under the authority of some 40 acts of Parliament. It undertakes work on all phases of agriculture. Research and experimentation are carried out by the research branch and by the animal pathology division of the food production and inspection branch. Research on the quality of cereal grains and oilseeds is done by the grain research laboratory of the Canadian Grain Commission. The commission also administers the Canada Grain Act, as it pertains to the inspection, weighing, storage and transportation of grain. Inspection and a wide variety of other services to maintain product standards and promote agricultural production are provided by the food production and inspection branch. The food and agricultural marketing branch promotes and expands domestic and foreign markets for Canadian agricultural products. The policy, planning and economics branch provides advisory services in the development of policies and programs. Programs concerning farm income security and price stability are provided under the Crop Insurance Act, the Canadian Dairy Commission Act, the Agricultural Stabilization Act and the Agricultural Products Board Act. The Agricultural Stabilization Board, Agricultural Products Board, Farm Credit Corporation, Canadian Dairy Commission, Canadian Grain Commission, Canadian Livestock Feed Board and National Farm Products Marketing Council report to Parliament through the minister of agriculture.

Air Canada. Formerly Trans-Canada Air Lines, Air Canada was incorporated by an act of Parliament in 1937 (RSC 1970, c.A-11) to provide a publicly owned air transportation service, with powers to carry on its business throughout Canada and outside Canada. The corporation maintains passenger, mail and commodity traffic services over nationwide routes and to the United States, Britain, France, Switzerland, the Federal Republic of Germany, Denmark, Bermuda, the Bahamas, Jamaica, Antigua, Barbados, the French Antilles, Cuba and Trinidad. Air Canada is responsible to Parliament through the minister of transport.

Anti-dumping Tribunal (Anti-dumping Tribunal Canada). Under the Anti-dumping Act (RSC 1970, c.A-15, as amended by SC 1970-71, c.3), the tribunal is a court of record and makes formal inquiry into the impact of dumping on production in Canada. Within 90 days of a preliminary determination of dumping by the deputy minister of national revenue for customs and excise, the tribunal must make an order or finding on the question of material injury, threat of material injury or retardation to production in Canada of like goods. The tribunal may at any time after the date of an order or a finding made by it review, rescind, change, alter or vary the order or finding or may rehear any matter. The Governor-in-Council may ask the tribunal to investigate and report on any matter relative to importation of goods that may cause or threaten injury to production of goods in Canada.

The tribunal has a chairman, four other members, a secretary, and research and support staff, with offices in Ottawa. The tribunal conducts public and closed hearings, personal interviews, in-house research, statistical and financial analysis, interviews with Canadian manufacturers and associations, and inspection of facilities. It reports to Parliament through the minister of finance.

Army Benevolent Fund Board. The board, established by the Army Benevolent Fund Act (SC 1947, c.49, as amended by SC 1974-75-76, c.3), administers the Army Benevolent Fund and other like funds, from special accounts set up in the Consolidated Revenue Fund. The board awards grants from the special account to veterans or their dependents for relief, if none is available from government sources, and for educational assistance, contingent on need and continued progress. The board has five members appointed by the Governor-in-Council, one of them nominated by the Royal Canadian Legion and one by the National Council of Veterans Associations in Canada. Head office is in Ottawa. The board reports to Parliament through the minister of veterans affairs.

Atlantic Development Council (Atlantic Development Council Canada). Created under the 1969 Government Organization Act (SC 1968-69, c.28), the council is composed of 11 members, including a chairman and vice-chairman, appointed by the Governor-in-Council to reflect the economic structure of New Brunswick, Nova Scotia, Prince Edward Island and Newfoundland. Its function is to advise the minister of regional economic expansion on matters to which his duties, powers and functions extend in respect to the Atlantic region, and particularly on plans, programs and proposals for fostering the economic expansion and social adjustment of the Atlantic region, and the feasibility and merits of particular programs and projects. Members of the council serve without remuneration. The council's office is located in St. John's, Nfld.

Atomic Energy of Canada Ltd. This Crown company was incorporated in February 1952 under the Atomic Energy Control Act, 1946 (RSC 1970, c.A-19) to take over in April 1952 the operation of the Chalk River project from the National Research Council. The main activities of AECL are the design, development and construction of CANDU nuclear power stations; the construction and operation of heavy water production plants and development of heavy water technology; operation of research and engineering development laboratories; the production and marketing of radioisotopes for medical and industrial uses and the design, manufacture and marketing of equipment using radioisotopes, such as therapy units for the treatment of cancer. The company reports to Parliament through the minister of energy, mines and resources.

Atomic Energy Control Board. By act of Parliament (RSC 1970, c.A-19) proclaimed October 1946, the regulation and control of atomic energy in Canada was placed under the Atomic Energy Control Board. The board reports to Parliament through the minister of energy, mines and resources.

Bank of Canada. Legislation of 1934 (RSC 1970, c.B-2) provided for the establishment of a central bank in Canada to regulate credit and currency, to control and protect the external value of the Canadian dollar and to stabilize the level of production, trade, prices and employment as far as possible within the scope of monetary action. The Bank of Canada acts as the fiscal agent of the Government of Canada, manages the public debt and has the sole right to issue notes for circulation. It is managed by a board of directors appointed by the government, composed of a governor, a deputy governor and 12 directors; the deputy minister of finance is also a member of the board (ex officio). The bank reports to Parliament through the minister of finance.

Blue Water Bridge Authority. Created by the Blue Water Bridge Authority Act (SC 1964, c.6), this non-profit organization is responsible for the operation of the Canadian portion of the bridge spanning the St. Clair River from Point Edward, Ont., to Port Huron, Mich. Tolls set are subject to the approval of the Canadian Transport Commission. All toll moneys must be used for the operation and maintenance of the present bridge or for building a new one. The authority is not an agent of the Crown but its members are appointed by the Governor-in-Council on the recommendation of the minister of transport for terms ranging from one to five years.

Board of Examiners for Canada Lands Surveyors. Established under the Canada Lands Survey Act (RSC 1970, c.L-5; amended by SC 1972, c.17, SC 1974-75-76, c.108; and SC 1976-77, c.30), the board examines candidates for commissions as Canada lands surveyors and is responsible for their discipline. The board has five members appointed by the Governor-in-Council, one of whom, the chairman, is the surveyor general of Canada lands; it is part of the energy, mines and resources department.

Bureau of Pensions Advocates (Bureau of Pensions Advocates Canada). The bureau was established in 1971 by amendments to the Pension Act (SC 1970-71, c.31). Composed of a chief pensions advocate appointed by the Governor-in-Council, and pensions advocates, officers and employees appointed under the Public Service Employment Act, it provides an independent professional legal aid service to applicants

for awards under the Pension Act. The bureau's head office is in Ottawa; there are district offices in 18 major centres across Canada. It reports to Parliament through the minister of veterans affairs.

Canada Council. The council was established by order-in-council dated April 15, 1957, under the terms of the Canada Council Act (RSC 1970, c.C-2 assented to March 28, 1957). As amended in June 1977, the act provides that the council is to foster and promote the study and enjoyment of, and the productions of works in the arts, mainly through a broad program of fellowships and grants. Its principal sources of income are an annual grant from the government (\$39 million for the year ended March 31, 1979) and income from an endowment fund (originally of \$50 million) which yielded over \$7 million in 1977-78. The proceedings of the council are reported each year to Parliament through the secretary of state.

Canada Deposit Insurance Corp. The corporation was established by legislation (RSC 1970, c.C-3), which received royal assent on February 17, 1967. It is empowered to insure Canadian currency deposits other than those belonging to the Government of Canada, up to \$20,000 a person, in banks, federally incorporated trust and loan companies that accept deposits from the public, and in similar provincially incorporated institutions authorized by their provincial governments to apply for such insurance. The corporation is also empowered to act as a lender of last resort for member institutions. Its board comprises a chairman, appointed by the Governor-in-Council, and four other directors who hold the positions of governor of the Bank of Canada, deputy minister of finance, superintendent of insurance and inspector general of banks. It reports to Parliament through the minister of finance.

Canada Development Corp. The corporation (CDC) was established in 1971 by the Canada Development Corporation Act (SC 1970-71, c.49) to develop and maintain strong Canadian-controlled and managed corporations in the private sector of the economy, to give Canadians greater opportunities to invest and participate in the economic development of Canada, and to operate profitably and in the best interests of all its shareholders. Administration of CDC is vested in a board of 20 directors. CDC is neither an agent of the Crown nor subject to the Financial Administration Act.

CDC concentrates on control-position equity investments in leading corporations in selected industries. Industries characterized by large, longer-range development projects, an upgrading of Canadian resources, a high technological base and a good potential for building a Canadian presence in international markets are considered. Investments have been made in petrochemicals, mining, oil and gas, health care, electronic word-processing and venture and expansion capital.

Canada Employment and Immigration Advisory Council. This council was established by the Employment and Immigration Reorganization Act — Part II, the Canada Employment and Immigration Advisory Council Act (SC 1976-77, c.54) proclaimed on August 15, 1977. The act provides for a chairman and 15 to 21 other members to be appointed by the Governor-in-Council, and requires the council to advise the minister of employment and immigration on all his ministerial responsibilities: labour market resources, employment services, unemployment insurance and immigration.

Canada Employment and Immigration Commission (Employment and Immigration Canada). The Employment and Immigration Reorganization Act (SC 1976-77, c.54) passed in August 1977 created the Canada Employment and Immigration Commission by integrating the former Unemployment Insurance Commission and the former manpower and immigration department. The legislation also created the employment and immigration department which provides services to the commission.

The employment and insurance objective of the commission is to further the attainment of national economic and social goals by realizing the full productive potential of Canada's human resources, while supporting the initiatives of individuals to pursue their economic needs and, more generally, their self-fulfilment through work, and to provide temporary financial assistance to people who are out of work.

The immigration objective of the commission is to administer the admission of immigrants and visitors (non-immigrants) in accordance with the economic, social and cultural interests of Canada.

Canada Labour Relations Board. Established under the authority of the Canada Labour Code Part V (RSC 1970, c.L-1), this board administers provisions of the code with respect to workers in industries under federal jurisdiction. It consists of a chairman, a vice-chairman, such additional vice-chairmen not exceeding four, as the Governor-in-Council considers advisable and not less than four or more than eight other members.

Canada Mortgage and Housing Corp. This Crown agency was incorporated by an act of Parliament (RSC 1952, c.46) in December 1945 to administer the National Housing Act. Under the National Housing 1954 Act (RSC 1970, c.C-16), the corporation insures mortgage loans made by approved lenders for new and existing housing and makes direct loans in remote and rural areas; guarantees home improvement loans made by banks; undertakes subsidized rental housing projects under federal-provincial arrangements; provides loans and subsidies for public housing projects; gives financial aid to the provinces through the

community services program for a wide range of community services; insures loans and provides subsidies to individuals or organizations for low-rental housing projects; offers financial assistance for rural and native housing; makes loans for the rehabilitation of older houses in rural and urban areas; makes grants for home insulation; conducts housing research; encourages urban planning; and owns and manages rental housing units. The corporation arranges for and supervises construction of housing projects on behalf of other government departments and agencies. It is responsible to Parliament through the minister of public works. The national office of the corporation is in Ottawa with local offices in major urban areas across Canada. Formerly known as Central Mortgage and Housing Corp., the name was changed on July 1, 1979.

Canadian Advisory Council on the Status of Women. The council received official status by order-in-council PC 1976-781 on April 1, 1976. It advises the government and informs the public on matters pertaining to the status of women. It recommends changes in legislation and other actions to improve the position of women, and publishes research papers which are available on request.

The council consists of a president and two vice-presidents who are full-time members and 27 part-time members, appointed from each province and territory by the Governor-in-Council for three-year terms. It reports to Parliament through the minister responsible for the status of women.

Canadian Arsenals Ltd. (Arsenals Canada). The principal function of this Crown corporation is to operate government-owned facilities for the production of certain defence material and other complementary items. It was established under the Companies Act in September 1945, and is subject to the Government Companies Operation Act (RSC 1970, c.G-7) and certain provisions of the Financial Administration Act (RSC 1970, c.F-10). It reports to Parliament through the minister of supply and services.

Canadian Broadcasting Corp. The CBC is a Crown corporation established by an act of Parliament in 1936, replacing an earlier public broadcasting agency, the Canadian Radio Broadcasting Commission, created in 1932. The Broadcasting Act of 1968 (RSC 1970, c.B-11) describes the CBC as established by Parliament for the purpose of providing the national broadcasting service.

The corporation has a president and 14 other directors appointed by the Governor-in-Council. The president is the chief executive officer. The executive vice-president is appointed by the corporation on the recommendation of the president and with the approval of the Governor-in-Council. He is responsible to the president for the management of broadcasting operations in accordance with corporation policies.

CBC operations are financed by public funds voted annually by Parliament, with supplementary revenue obtained from commercial advertising. The CBC's accounts are audited annually by the auditor general of Canada and the corporation reports to Parliament through the secretary of state.

Canadian Commercial Corp. This corporation, wholly owned by the Government of Canada, was established in 1946 by an act of Parliament (RSC 1970, c.C-6) to assist in the development of trade between Canada and other nations. The corporation may act either as the principal or agent in the import or export of goods and commodities to or from Canada. Under this broad charter, it acts primarily as the contracting agency when other countries and international agencies wish to purchase from Canada on a government-to-government basis.

On July 1, 1978, the Canadian Commercial Corp. headquarters was formed to facilitate turnkey and major overseas projects in the further development of trade with other countries.

CCC traditional procurement business will continue to be handled by the export supply centre of the supply and services department, on the basis of a memorandum of understanding between CCC and DSS.

On November 24, 1978, the government transferred the duties and responsibilities of the minister under the Canadian Commercial Corporation Act of 1946 from the minister of supply and services to the minister of industry, trade and commerce.

Canadian Dairy Commission. This commission, which reports to Parliament through the minister of agriculture, was established in December 1966 (RSC 1970, c.C-7) to provide efficient producers of milk and cream the opportunity of obtaining a fair return for labour and investment and at the same time ensure consumers of dairy products a continuous and adequate supply. The commission consists of three members appointed by the Governor-in-Council and operates with the advice of a nine-member advisory committee appointed by the minister. Since 1970, the commission has chaired a national milk supply management committee, comprised of provincial milk marketing agencies and provincial government agencies, which manages the market share quota system under the terms of a federal-provincial milk marketing plan.

Canadian Film Development Corp. This corporation, established by an act of Parliament in March 1967 (RSC 1970, c.C-8), fosters and promotes the development of a feature film industry in Canada through investment in productions, loans to producers, awards for outstanding accomplishments, and advice and assistance in distribution and administrative matters. It co-operates with other federal and provincial departments and agencies having like interests and as of April 1, 1977, is financed by a yearly appropriation. The corporation consists of the government film commissioner (ex officio) and six other members

appointed by the Governor-in-Council for terms of five years. The corporation reports to Parliament through the secretary of state.

Canadian Government Specifications Board (Specifications Board Canada). Created in 1934 under the authority of the National Research Council Act (RSC 1970, c.N-14) as the Government Purchasing Standards Committee, this interdepartmental agency's name was changed in 1948 to Canadian Government Specifications Board (CGSB).

In 1965, responsibility for the CGSB's operation was transferred by order-in-council to the defence production department, now part of supply and services. In 1978, membership of the Canadian Government Specifications Board was changed to include nominees from the supply and services department and three other federal government departments, three provinces, three municipalities, three national organizations and one member at large appointed by the minister.

The role of the CGSB is to provide voluntary standards for both public and private sectors for procurement, consumer requirements, legislation, technical practices, test procedures and to support international standardization in more than 100 fields. It has compiled more than 1,800 standards in both official languages. The technical process of developing and revising standards is performed by some 300 committees and about 3,000 members representing governments, producers, consumers, research and testing agencies, educational institutions, professional, technical and trade societies. The board works closely with the Standards Council of Canada and Metric Commission Canada in relation to national and international standardization and metric conversion. It is accredited by the council as a national standards writing organization.

Canadian Grain Commission. The Canada Grain Act (SC 1970-71, c.7) came into force in April 1971, repealing the Canada Grain Act, 1930 (RSC 1952, c.25) and creating this commission to replace the former Board of Grain Commissioners for Canada. It provides general supervision over the physical handling of grain in Canada by licensing elevators and elevator operators, by inspecting, grading and weighing grain received at and shipped from terminal elevators, and by other services associated with regulating the grain industry. It administers the Grain Futures Act, which provides for grain futures trading.

The commission consists of a chief commissioner and two commissioners. Its objects are, in the interests of grain producers, to establish and maintain standards of quality for Canadian grain, to ensure a dependable commodity for domestic and export markets and to regulate grain handling in Canada. It has authority to conduct investigations and hold hearings, and to undertake, sponsor and promote research in relation to grain and grain products. The commission reports to Parliament through the minister of agriculture.

Canadian Human Rights Commission. This commission was established on July 14, 1977 by the Canadian Human Rights Act (SC 1976-77, c.33) to deal with complaints regarding discriminatory practices and to develop and conduct information programs to foster public understanding of this act. The commission may designate an investigator to examine a complaint of discrimination and may appoint a conciliator to bring about a settlement. At any stage after a complaint is filed, the commission may appoint a human rights tribunal to inquire into it, and if necessary, to make an order.

The commission consists of two full-time members, the chief commissioner and the deputy chief commissioner, and from three to six other members who may be appointed by the Governor-in-Council as full-time members for a term of up to seven years, or as part-time members for up to three years.

The minister of justice designates one member of the commission to be privacy commissioner to receive, investigate and report on complaints from individuals who allege that they are not being accorded the rights they are entitled to in relation to personal information recorded in a federal information bank.

The head office of the commission is in the national capital region; there are regional offices in Halifax, Montreal, Toronto, Winnipeg and Vancouver. The commission reports to Parliament through the minister of justice.

Canadian International Development Agency. The operation of Canada's international development programs is the responsibility of the Canadian International Development Agency. CIDA was originally established by order-in-council PC 1960-1476 and until 1968 was known as the External Aid Office. The agency is under the direction of a president and reports to Parliament through the secretary of state for external affairs.

Canadian International Development Board. The board is a high-ranking interdepartmental committee that assists the president of the Canadian International Development Agency (CIDA) in preparing recommendations on aid programs to the secretary of state for external affairs. It is made up of the under-secretary of state for external affairs, the deputy ministers of the departments of agriculture, finance and industry, trade and commerce, the governor of the Bank of Canada, the secretary of the treasury, the clerk of the Privy Council office and the president of the International Development Research Centre. It meets under the chairmanship of CIDA's president.

Canadian Livestock Feed Board. This board is a Crown corporation reporting to Parliament through the minister of agriculture. Established under the Livestock Feed Assistance Act in 1967, its objectives are to ensure the availability of feed grain in Eastern Canada and British Columbia, adequate storage space in Eastern Canada, and reasonable stability and fair equalization of feed grain prices in Eastern Canada and in British Columbia. The board administers a feed freight equalization program which pays part of the transportation costs of feed grains. The act stipulates that the board must make a continuing study of feed grain requirements and availability and must study and make recommendations to the minister on requirements for additional feed grain storage facilities in Eastern Canada. The board must advise the government on all matters pertaining to stabilization and fair equalization of feed grain prices to livestock feeders and, to the greatest extent possible, to consult and co-operate with all federal departments, branches or other agencies or any province with similar duties, aims or objects.

The board has been assigned responsibilities under the national feed grain policy, effective since August 1974. It examines selling practices east of Thunder Bay and supervises the domestic market outside the designated region of the Canadian Wheat Board. The board designates the chairman of the committee supervising reserve stocks of feed grains presently held at Thunder Bay, Vancouver and various locations in Eastern Canada. If it finds bad pricing or supply practices, it can intervene directly as buyer or seller of feed grain. The Livestock Feed Assistance Act stipulates that the board may buy, transport, store and sell feed grains in Eastern Canada and British Columbia when authorized to do so by the Governor-in-Council.

The board is composed of three to five members with headquarters in Montreal and a branch office in Vancouver. A seven-member advisory committee, appointed by the Governor-in-Council, and representing livestock feeders in Eastern Canada and British Columbia, meets periodically with the board to review and discuss all aspects of feed grain supplies and prices, and related policies. This committee may make recommendations to the minister and the board.

Canadian National Railways. The Canadian National Railway Co. was incorporated to administer an undertaking made up mainly of railway and other service facilities and activities. It includes the assets of the former Grand Trunk Railway Co. of Canada and its subsidiaries, and of the Canadian Northern System, as well as certain Crown-owned properties which Canadian National manages and operates.

Primary statutes governing its organization and operation are the Canadian National Railways Act (RSC 1970, c.C-10) and the Railway Act (RSC 1970, c.R-2). Direction and control of the company and its undertaking are vested in a board of directors; its principal officers are the chairman of the board and the president, who is the chief executive officer.

Canadian Patents and Development Ltd. (CPDL) is a Crown corporation. It was established in 1947 to assess, patent and license the industrial and intellectual property arising out of research conducted in the laboratories of the federal government, provincial institutes and universities.

The government, through the Public Servants Act in 1954, made CPDL the prime agency for exploiting public servants' inventions which by that act belong to the Crown. CPDL also exploits industrial and intellectual property resulting in the private sector from certain government-financed research and development. Revenue received from CPDL commercial activities is used to defray CPDL operating expenses.

The board of directors of the corporation consists of individuals from industry, universities, provincial institutes and the federal government. The head office is in Ottawa. CPDL reports to Parliament through the minister of industry, trade and commerce.

Canadian Pension Commission. This commission, established in 1933 by amendments to the Pension Act (RSC 1970, c.P-7), replaced the Board of Pension Commissioners, the first organization created to deal solely with war pensions for service in Canada's armed forces. The commission's main function is administration of the Pension Act under which it adjudicates on all claims for pensions in respect of disability or death arising out of service in Canada's armed forces; and parts of the Civilian War Pensions and Allowances Act, which provide for payment of pensions in respect of death or disability arising out of civilian service directly related to the prosecution of World War II. It also adjudicates on claims for compensation as a result of having been a prisoner of war and for pension in respect of disability or death arising out of RCMP service and under various other measures. It authorizes and pays monetary grants accompanying certain gallantry awards bestowed on members of the armed forces and administers various trust funds established by private individuals for the benefit of veterans and their dependents. The commission consists of eight to 14 commissioners and up to 10 ad hoc commissioners appointed by the Governor-in-Council. Its chairman has the rank of a deputy minister and it reports to Parliament through the minister of veterans affairs.

Canadian Permanent Committee on Geographical Names (Geographical Names). This committee deals with all questions of geographical nomenclature affecting Canada and advises on research and investigation into the origin and use of geographical names. Its membership includes representatives of federal mapping agencies and other federal offices concerned with nomenclature and a representative appointed by each

province. The committee's functions were redefined in 1969 (order-in-council PC 1969-1458). The order-in-council recognizes that the provinces have exclusive jurisdiction to make decisions on names in lands under their jurisdiction. The committee is administered by the energy, mines and resources department.

Canadian Radio-television and Telecommunications Commission. This commission, established as the Canadian Radio-Television Commission under the provisions of the Broadcasting Act (RSC 1970, c.B-11), regulates and supervises all aspects of the Canadian broadcasting system. The Canadian Radio-television and Telecommunications Commission Act, promulgated April 1, 1976, amended the Broadcasting Act to assign regulatory responsibility to the Canadian Radio-television and Telecommunications Commission (CRTC) over federally regulated telecommunications carriers.

CRTC regulates and supervises a single Canadian broadcasting system, mainly through the process of licensing broadcasting undertakings and administering a body of regulation and policy statements with a view to implementing the policies set out in the Broadcasting Act.

One of the commission's methods of satisfying the concerns as set out in the Railway Act is the holding of public hearings in connection with applications for general rate revisions submitted by the telecommunications carriers under its jurisdiction.

The CRTC consists of an executive committee of up to nine full-time members composed of a chairman, two vice-chairmen and six other full-time members. The full commission includes the executive committee and up to 10 part-time members chosen regionally. All are appointed by the Governor-in-Council. The commission reports to Parliament through the minister of communications.

Canadian Saltfish Corp. Established under the Saltfish Act (SC 1969-70, c.32) and operative since May 1970, this corporation's main purpose is to improve the earnings of fishermen and other primary producers of salt-cured fish, through production or purchase, processing and marketing of salt cod from participating provinces.

The head office is at St. John's, Nfld. The board of directors is composed of a chairman, a president who is chief executive officer, one director for each participating province and not more than five other directors, all appointed by the Governor-in-Council. It is assisted by an advisory committee of 15 members, at least half of them fishermen or representatives of fishermen. The corporation's financial obligations are limited to \$15 million and it is required to operate without grant appropriation from Parliament. It reports to Parliament through the minister of fisheries and oceans.

Canadian Transport Commission. The commission, a court of record created in 1967 by the National Transportation Act (RSC 1970, c.N-17), took over powers formerly vested in the Board of Transport Commissioners, the Air Transport Board and the Canadian Maritime Commission. Four committees regulate the different transport modes — air, rail, water and commodity pipeline. Regulation of extra-provincial motor vehicle transport is in effect only for the Roadcruiser bus service operated by the Canadian National Railways in Newfoundland. In July 1976 the CN bus service was exempted by the Governor-in-Council from provisions of the Motor Vehicle Transport Act (RSC 1970, c.M-14), and came under the jurisdiction of the motor vehicle transport committee of the Canadian Transport Commission, pursuant to the National Transportation Act. Regulatory control over all other extra-provincial motor vehicle undertakings is exercised by provincial highway transport boards, acting as agents of the federal government, as provided for in the Motor Vehicle Transport Act. A sixth committee deals with review and appeals, while the seventh is concerned with international transport policy. A research branch studies the economic aspects of all modes of transport within, into or from Canada, and a traffic and tariff branch ensures that all tariffs and tolls issued by federally regulated railways, railway express companies, water carriers, motor vehicle undertakings and international bridge and tunnel companies are compiled, issued and filed as required by the Railway Act, the Transport Act, the National Transportation Act and regulations of the commission.

The commission consists of not more than 17 members, including a president and two vice-presidents, appointed by the Governor-in-Council for a maximum of 10 years. It reports to Parliament through the minister of transport.

Canadian Wheat Board. The board was incorporated in 1935 under the Canadian Wheat Board Act (RSC 1970, c.C-12) to market, in the interprovincial and export trade, grain grown in Canada. Its powers include authority to buy, take delivery of, store, transfer, sell, ship or otherwise dispose of grain. Except as directed by the Governor-in-Council, the board was not originally authorized to buy grain other than wheat but since August 1949 it has also been authorized to buy barley and oats. Only grain produced in the designated area, Manitoba, Saskatchewan, Alberta and parts of British Columbia, is purchased by the board, which controls the delivery of grain into elevators and railway cars in that area as well as the interprovincial movement for export of wheat, oats and barley generally. The board currently reports to Parliament through a designated minister of state.

Cape Breton Development Corp. This proprietary Crown corporation was created by an act of Parliament in July 1967 (RSC 1970, c.C-13) and came into existence by proclamation in October 1967. It was set up to

rationalize the coal industry of Nova Scotia's Cape Breton Island and to broaden the base of the area's economy by assisting financing and development of industry to provide employment outside the coal mines.

The corporation acquired former interests of the major coal producer in the Sydney coalfield and is operating three mines, two of them new, a modern coal preparation plant and other ancillaries. It is active in development of tourism, primary products and secondary industries.

The act provides for a board of directors, comprising a chairman, a president and five other directors. Head office is located in Sydney. The corporation reports to Parliament through the minister of regional economic expansion. Its operations are financed by the federal government.

Columbia River Treaty Permanent Engineering Board. The permanent engineering board, consisting of two Canadians and two Americans, was established under the 1964 Columbia River Treaty between Canada and the United States. The board assembles records and inspects and reports at least annually on matters within the scope of the treaty. It reports to Parliament through the minister of energy, mines and resources.

Commissioner of Official Languages. Appointed by Parliament pursuant to the Official Languages Act (RSC 1970, c.O-2), the commissioner holds office for a term of seven years, and is eligible to be re-appointed for a further term not exceeding seven years. He is responsible to Parliament for ensuring recognition of the equal status of French and English as Canada's official languages and for ensuring compliance with the spirit and intent of the act in all the institutions of the Parliament and Government of Canada. The commissioner is empowered to receive and investigate complaints from the public and, on his own initiative, to conduct investigations into possible violations of the act. The results of investigations must be communicated to the complainants and the institutions concerned and may, at the commissioner's discretion, be the subject of a special report to Parliament. The commissioner reports annually to Parliament on the conduct of his office and the discharge of his duties, and may make recommendations for changes in the act as he deems necessary or desirable.

Communications, Department of. The department was established under the 1969 Government Organization Act and operates under authority of the Department of Communications Act (RSC 1970, c.C-24). The minister of communications is responsible for fostering the orderly operation and development of communications for Canada. This includes recommending national policies and programs regarding communications services for Canada, promoting the efficiency and growth of Canadian communications systems and helping them adjust to changing conditions, and encouraging development and introduction of new communication facilities and resources. Responsibilities also include managing the radio frequency spectrum to permit orderly use of radio communications, protecting Canadian interests in international telecommunications matters, and co-ordinating telecommunications services for departments and agencies of the federal government.

Teleglobe Canada, the Canadian Radio-television and Telecommunications Commission and Telesat Canada report to Parliament through the minister of communications.

Consumer and Corporate Affairs, Department of (Consumer and Corporate Affairs Canada). This department was established in 1967 (RSC 1970, c.C-27) replacing the Department of the Registrar General of Canada. The duties, powers and functions of the minister extend to and include all matters over which Parliament has jurisdiction, not by law assigned to any other department, branch or agency of the federal government, relating to: consumer affairs; corporations and corporate securities; combines, mergers, monopolies and restraint of trade; bankruptcies and insolvencies; and patents, copyrights, trade marks and industrial design.

The functions of the department are divided into three main areas. The consumer affairs bureau co-ordinates government activities in the consumer field and supervises the department's field operations across Canada; the corporate affairs bureau administers the government's corporate activities, laws and regulations, including those pertaining to patents, trade marks, industrial design and copyright; competition policy is regulated by the competition policy bureau. As registrar general of Canada, the minister of consumer and corporate affairs is the custodian of the Great Seal of Canada, the Privy Seal of the Governor General, the seal of the administrator of Canada and the seal of the registrar general of Canada. The Restrictive Trade Practices Commission (Combines Investigation Act) is part of the department and reports directly to the minister.

Copyright Appeal Board (Copyright Appeal Board Canada). The board provides a means by which those using music protected by copyright can oppose the amount of the fees proposed to be collected annually by performing rights societies for the use of the music within their respective repertoires in Canada. The Copyright Act (RSC 1970, c.C-30) empowers the board to deal only with the amount of the fees that the societies propose to collect for an ensuing calendar year. It has no authority to draft terms and conditions of the tariffs. Hearings before the board are conducted in a quasi-judicial manner. After considering proposed statements of fees and all objections received thereto, if any, the board makes such alterations to the

proposed statements as it thinks appropriate and transmits the statements thus altered, revised or unchanged to the minister of consumer and corporate affairs. The decision of the board is final and binding. The Copyright Appeal Board consists of three members appointed by the Governor-in-Council, one of whom, as chairman, must hold or have held high judicial office.

Correctional Investigator. Appointed by order-in-council PC 1973-1431 of June 5, 1973 as a commissioner under Part II of the Inquiries Act, the correctional investigator has the power to investigate on his own initiative, on request from the solicitor general of Canada, or on complaint from or on behalf of inmates, as defined in the Penitentiary Act, and report upon problems of inmates that come within the responsibility of the solicitor general. The office is in Ottawa and is independent of the Correctional Service of Canada.

Correctional Service of Canada (Correctional Service Canada). This service (formerly the Canadian Penitentiary Service and the National Parole Service) operates under the Penitentiary Act (RSC 1970, c.P-6 and amendments thereto and SC 1976-77, c.53) and the National Parole Act and is under the jurisdiction of the solicitor general of Canada. It is responsible for all federal penitentiaries, for the care and training of persons committed to these institutions and for the supervision and assistance given to parolees from these institutions. The commissioner of corrections, under the direction of the solicitor general, has control and management of the service and all matters connected with it.

Court Martial Appeal Court. This court was established as a superior court of record under the National Defence Act (RSC 1970, c.N-4). Accused persons found guilty by a court martial have the right to direct an appeal to the Court Martial Appeal Court on the legality of any or all findings, or on the legality of the whole or any part of the sentence. The court is composed of not fewer than four judges of the Federal Court of Canada and additional judges of a superior court of criminal jurisdiction as designated by the Governor-in-Council, with one judge appointed as president. Appeals are heard by a minimum of three judges. The Court Martial Appeal Court may sit and hear appeals at any place under direction of the president. An appellant whose appeal has been wholly or partially dismissed by the court may, under certain circumstances, appeal to the Supreme Court of Canada; where the Court Martial Appeal Court has wholly or partially allowed an appeal, the minister of national defence may similarly enter an appeal to the Supreme Court of Canada.

Crown Assets Disposal Corp. (Surplus Sales Corp. Canada). This agency corporation was established in 1944 as the War Assets Corp. under the Surplus Crown Assets Act (RSC 1970, c.S-20). Its name was changed to Crown Assets Disposal Corp. in 1949. The corporation is solely responsible for the sale of federal government surplus movable assets located in Canada and at Canadian government establishments throughout the world. It also acts as agent on behalf of foreign governments in selling their surplus property located in Canada and has an agreement with a European agency for marketing certain Canadian military surplus assets located abroad. While the corporation's normal method of sale is to invite written offers, on occasion it sells by public auction and through retail outlets. The act provides for a board of directors, comprising a chairman and a minimum of five other directors. Its head office is in Ottawa. Regional offices are in Dartmouth, Montreal, Toronto, Ottawa, Edmonton and Coquitlam. The corporation is responsible to Parliament through the minister of supply and services.

Defence Construction (1951) Ltd. (Defence Construction Canada). This Crown corporation contracts for major construction and maintenance projects required by the defence department. It was incorporated in May 1951 under the authority of the Defence Production Act. In April 1965 its control and supervision were transferred from the minister of defence production to the minister of national defence.

Defence Construction (1951) Ltd. (DCL) obtains tenders, makes recommendations regarding awards, and awards and administers major construction and maintenance contracts. This includes supervision of construction work and the certification of contractors progress claims for completed work.

The company provides technical and administrative assistance to government departments and agencies. Head office is in Ottawa and branch offices are in Halifax, Montreal, Toronto, Winnipeg, Vancouver and Lahr, Federal Republic of Germany.

Director of Soldier Settlement and Director of the Veterans' Land Act. The director of soldier settlement (SC 1919, c.71) is also director of the Veterans' Land Act (RSC 1970, c.V-4), and in each capacity is legally a corporation sole. For administrative purposes the programs carried on under both acts constitute integral parts of the services provided by the veterans affairs department.

Economic Council of Canada. This corporation, established under legislation passed in August 1963 (RSC 1970, c.E-1), consists of a full-time chairman and two full-time directors appointed for a term not to exceed seven years, and not more than 25 additional members to serve part time and without remuneration. The council is to be as representative as possible of the private sector across the country, labour, agriculture, primary industry, secondary industry, commerce and the general public. Its functions are to study

economic developments and recommend measures to achieve the highest possible levels of employment and efficient production and to reduce regional disparities. The council reports to Parliament through the prime minister and publishes various reports and studies.

Economic Development, Ministry of State for. Created by order-in-council PC 1978-3803 on December 19, 1978 the ministry has responsibility to formulate, develop, evaluate and co-ordinate new and comprehensive policies in relation to the government programs and activities that directly support Canadian economic development. It also promotes co-operative relationships with provinces, business and labour and other public and private organizations for the development of the economy; advises on the allocation of financial, personnel and other resources to federal programs that directly support economic development; and develops mechanisms to improve and integrate the delivery of economic development programs at the local or regional level.

The ministry is organized into five branches: policy formulation; operations; evaluation and assessment; personnel, finance and administration; and communications. It provides policy and operational support to the cabinet committee on economic development.

Eldor Resources Ltd. This company is a wholly owned subsidiary of Eldorado Nuclear Ltd. and reports to Parliament through the minister of energy, mines and resources. It was incorporated in 1978 to purchase an interest in the Key Lake, Sask. uranium ore deposit and other uranium resource properties.

Eldorado Aviation Ltd. This company is a wholly owned subsidiary of Eldorado Nuclear Ltd. and was incorporated in 1953 to carry air traffic, both passenger and freight, for Eldorado Nuclear Ltd. It reports to Parliament through the minister of energy, mines and resources.

Eldorado Nuclear Ltd. Set up in 1944 (RSC 1952, c.53) under the name of Eldorado Mining and Refining (1944) Ltd. (the date was omitted in June 1952 and the name changed in 1968), the Crown company's business is the mining and refining of uranium and production of nuclear fuels in Canada. The company acts as a custodian of concentrates purchased under stockpiling contracts. It reports to Parliament through the minister of energy, mines and resources.

Employment and Immigration, Department of (Employment and Immigration Canada). This department was established in 1977 to provide services to the Canada Employment and Immigration Commission.

Energy, Mines and Resources, Department of (Energy, Mines and Resources Canada). The department was created in 1966 by the Government Organization Act (RSC 1970, c.E-6). In addition to its administrative services it is organized into three sectors. The energy sector has responsibilities relating to the development of plans and policies for all forms of energy, including renewable energy sources and energy conservation, the development of programs, legislation and agreements to implement those policies, the direction of studies relating to energy sources and requirements, provision of in-depth economic analysis, and the co-ordination of policy advice. A major responsibility of the sector is research on and formulation of a national energy policy. The mineral policy sector gathers economic data on non-renewable resources for use by government, industry and the public. It also develops policy proposals for the government and the mineral industry to help determine policies and decisions that will ensure an adequate, dependable and timely flow of minerals to meet the country's needs at reasonable cost. The science and technology sector includes a geological survey of Canada, a Canada centre for mineral and energy technology (CANMET), a surveys and mapping branch, an earth physics branch, a Canada centre for remote sensing and the polar continental shelf project, all engaged in research and the provision of information; an office of energy research and development which co-ordinates federal research and development related to energy policies; an explosives branch which controls, under provisions of the Explosives Act, the production and handling of explosives; and the Canada centre for geoscience data.

Atomic Energy of Canada Ltd., Eldorado Nuclear Ltd., Eldorado Aviation Ltd., the Atomic Energy Control Board, the National Energy Board, Uranium Canada Ltd., Petro-Canada, the Energy Supplies Allocation Board and the interprovincial boundary commissions report to Parliament through the minister of energy, mines and resources. Administrative support for the international boundary commission is provided by the energy, mines and resources department; in reporting to Parliament and dealing with its counterpart in the United States the commission is responsible to the secretary of state for external affairs.

Environment, Department of the (Environment Canada). Established by an act of Parliament in 1979, the environment department carries the main federal responsibility of combating pollution and ensuring proper management and development of Canada's renewable resources.

An atmospheric environment service (AES) acquires, processes and provides information on climatological, meteorological and ice data. AES maintains a national communications system to provide current and forecast weather and ice information to the general public, aviation, marine, agriculture and other special users. It also carries out research into atmospheric conditions and processes, air quality, and in

support of weather observing and forecast systems. AES represents Canada in the international meteorological community.

An environmental protection service (EPS) ensures that the federal government's responsibilities for environmental protection are carried out and, where necessary, enforced under appropriate legislation. EPS is the focal point for contact and liaison with provincial agencies and with industry on environmental protection. It is also a point of contact with other federal departments and agencies and the public. EPS develops environmental regulations, codes, protocol, and other protection and control instruments to implement governmental legislation. The service is concerned with air and water pollution, waste management including resource recovery, environmental contaminants, environmental impact assessment and control and environmental emergencies.

Responsibility for environmental control is shared by federal, provincial and municipal governments. EPS co-operates with provincial and territorial governments to which in some instances responsibilities are delegated.

An environmental management service (EMS) undertakes programs related to inland waters, lands, forestry and wildlife. These programs involve direct resource management in areas of federal jurisdiction (migratory birds, international waters), co-operative programs with provincial governments in areas of shared responsibility, research, data collection and advice on the policies and programs of other federal departments. Most of the work of EMS is carried out through regional establishments and national research institutes.

The department co-ordinates the government's relationships in environmental and resources matters with the provinces and with other countries. Advice to the minister is provided by an environmental advisory council and a separate forestry advisory council which includes representatives from industry, universities and the scientific community.

Export Development Corp. EDC operates under authority of the Export Development Act (RSC 1970, c.E-18, as amended). A Crown corporation, it provides a wide range of insurance, guarantee and loan services to Canadian exporters and foreign buyers to facilitate and develop export trade. EDC reports to Parliament through the minister of industry, trade and commerce. Its affairs are administered by a 12-member board of directors chaired by the corporation's president. The board consists of senior representatives of government and the Canadian financial and private business sectors. The principal services are: export insurance, to insure Canadian exporters of goods and services against non-payment by foreign buyers due to credit or political events over which neither buyer nor seller has any control; a package for performance-related insurance and guarantees for Canadian manufacturers, consulting engineers, construction firms, banks, surety companies and other financial institutions; long-term export loans to foreign buyers in respect of the purchase of capital goods or major services from Canada when extended terms are necessary to meet international credit competition; and foreign investment insurance, to insure Canadian investments abroad against non-commercial risks such as war or revolution, expropriation or confiscation, or the inability to repatriate capital or earnings. EDC may also guarantee financial institutions against loss when they are involved in an export transaction by financing either the Canadian supplier or the foreign buyer.

External Affairs, Department of (External Affairs Canada). The main function of the department, established in 1909, is the management of Canada's foreign relations; to this end, the department functions as a central policy agency. The responsible minister is the secretary of state for external affairs. The senior permanent officer (deputy minister) of the department, the under-secretary of state for external affairs, is assisted by five deputy under-secretaries and by four assistant under-secretaries and is advised by officers in charge of bureaus, divisions, and special or single-purpose units. Directors general or directors of these units are assisted by foreign service officers, specialists in various occupational groups and an administrative staff. Officers serving abroad are formally designated as high commissioner, ambassador, minister, minister-counsellor, counsellor, first secretary, second secretary, third secretary and attaché at diplomatic posts, and consul general, consul and vice-consul at consular posts. Canada maintains 199 diplomatic, consular and other missions, of which 11 are permanent delegations to international organizations, 68 are non-resident, two are delegations to international conferences, and 14 are honorary consulates.

In Ottawa the department's work is conducted by regional, functional and administrative bureaus and operational units. The five regional bureaus administer 13 geographical divisions, each responsible for the countries of a region. Eleven functional bureaus, comprised of 29 divisions, are concerned with energy, trade and general economic relations; consular services; co-ordination; defence and arms control; development, industry and science relations; legal affairs; international cultural relations; information; intelligence analysis and security; economic intelligence; and United Nations affairs. Four administrative bureaus are responsible for personnel, finance and management services, communications and general services, and physical resources.

In addition, there is a secretariat for an interdepartmental committee on external relations, an interdepartmental inspection service, a chief of protocol, an operations centre, a chief air negotiator, a passport office in Ottawa and seven regional passport offices, a press office, an information service, a

library, an adviser on disarmament and arms control, an economic adviser, an adviser on conflict of interest and on international appointments, a co-ordinator and ambassador-at-large for the conference on security and co-operation in Europe (CSCE) and a senior management secretariat.

The International Joint Commission reports to the secretary of state for external affairs of Canada as well as to the secretary of state of the United States. The secretary of state for external affairs reports to Parliament for the Canadian International Development Agency.

Farm Credit Corp. This Crown corporation, established in 1959 (RSC 1970, c.F-2) is responsible to Parliament through the minister of agriculture. Under the Farm Credit Act it makes long-term mortgage loans to farmers. It also administers the Farm Syndicates Credit Act.

Federal Business Development Bank. The bank was established by an act of Parliament in 1974 (SC 1974-75-76, c.14) as a federal Crown corporation to succeed the Industrial Development Bank. Under the act which came into force in October 1975, FBDB assists in establishing and developing business enterprises in Canada by providing financial assistance and management services of counselling, training and information by supplementing such services available from other sources. The bank gives particular attention to the needs of small enterprises.

The board of directors consists of the president, four persons from the public service, and 10 persons from outside the public service. The bank's authorized capital is \$200 million, but it may raise additional funds by the issue and sale of debt obligations, provided that the total of the bank's direct and contingent liabilities shall not exceed 10 times its capital.

Federal Environmental Assessment Review Office. Following a cabinet decision in December 1973 (adjusted in February 1977), this office was formed to establish an environmental assessment and review process. All government departments and agencies are subject to the process, except proprietary Crown corporations and regulatory agencies which are invited to participate.

The process requires participating federal agencies to screen their projects, programs and activities for potentially adverse environmental effects, and refer those which may have significant impact to the review office for formal review. The office is directed by an executive chairman who reports to the minister of the environment.

In undertaking its review, each environmental assessment panel issues guidelines for use by the project proponent in preparing an environmental impact statement. Public response to this document is obtained through hearings where technical organizations, interest groups, and individual citizens are encouraged to present their views. After the panel has reviewed all the information, a report is prepared for the minister. The report contains conclusions and recommendations concerning project implementation. Decisions on the recommendations are made by the minister of the environment and the minister responsible for the project.

Federal-Provincial Relations Office. For administrative purposes, the office is regarded as a department of government under the prime minister. The office came into being in January 1975 under legislation passed by Parliament in December 1974. For some years prior to the creation of the new office, its functions had been the responsibility of a division of the Privy Council office. The office is headed by the secretary to cabinet for federal-provincial relations.

The office assists the prime minister in his overall responsibility for federal-provincial relations; assists the cabinet in examining federal-provincial issues; assists ministers, departments, and agencies in the conduct of their relations with provincial governments; undertakes special studies; monitors provincial views on federal policies and programs and the evolution of provincial policies as they affect federal policies; and co-ordinates federal participation in conferences of first ministers.

Finance, Department of (Department of Finance Canada). Created by an act of Parliament in 1869, this department now operates under the Financial Administration Act (RSC 1970, c.F-10 as amended). It is primarily responsible for advising the government on the economic and financial affairs of Canada. The department's work is carried out in five branches. A fiscal policy and economic analysis branch is responsible for planning fiscal policy, analysis of its effects on the economy, and analyzing and forecasting the financial requirements of the federal government. A tax policy and legislation branch analyzes and makes recommendations relating to tax policy and maintains a tax system that raises revenues and targets incentives to meet the government's goals. A federal-provincial relations and social policy branch makes policies for and administers major federal-provincial programs under which transfer payments are made to provinces, and is responsible for policy advice on social programs in the manpower, employment and cultural areas. An international trade and finance branch investigates and reports on proposals regarding the Canadian Customs Tariff and related matters; studies Canada's international trade policy, particularly as it relates to imports; advises on balance of payments and foreign exchange matters; deals with questions relating to the international monetary system; and administers Canada's relations with international monetary and financial institutions. An economic programs and government finance branch encourages

the development of policies and programs for Canadian national resources. The inspector general of banks is an office of the department.

The following agencies report to Parliament through the minister of finance: the Anti-dumping Tribunal, the Bank of Canada, the Canada Deposit Insurance Corp., the Department of Insurance and the Tariff Board. The minister of finance acts as spokesman in Parliament for the auditor general.

Fisheries and Oceans, Department of. Established as a separate entity in April 1979 under the authority of the Government Organization Act, 1978, the fisheries and oceans department has overall responsibility for Canada's coastal and inland fisheries, fishing and recreational harbours, hydrography and marine sciences and the co-ordination of the federal government's policies and programs in respect to the oceans.

Departmental programs are concerned with fisheries and marine mammal resource management and conservation, enforcement of fisheries regulations, industrial development, fish inspection and quality control, marketing and promotion of fish products, biological and technical research on fish and other aquatic flora and fauna, fishing vessel insurance and vessel construction assistance administration, management and development of small craft harbours across Canada, studies into the management of recreational fisheries, and administration of international and federal-provincial fisheries agreements.

In the area of ocean and aquatic sciences, the department is responsible for physical, chemical and biological oceanography and limnology research aimed at gaining a better understanding of marine and freshwater environments. Other responsibilities include hydrographic surveying, measurement of tide and water levels and production of navigational, bathymetric and other charts of Canadian coastal and inland waters. Oceanographic information is acquired and disseminated through the marine environmental data service.

Fisheries Prices Support Board. Under the Fisheries Prices Support Act (RSC 1970, c.F-23) the board is responsible for investigating and, where appropriate, recommending action to support prices of fishery products where declines have occurred. Subject to approval of the cabinet, it is empowered to purchase fishery products at prescribed prices or to make deficiency payments to producers of fishery products equal to the difference between a prescribed price and the average price at which such products were sold. The board functions under the direction of the minister of fisheries and oceans.

Foreign Claims Commission. By order-in-council PC 1970-2077 of December 1970, the Canadian government established this commission under the Inquiries Act to inquire into property claims made by Canadian citizens and the federal government against foreign countries, which may be referred to the commission by the government. The reference is made after the government has negotiated a financial agreement with the foreign country. The commissioners submit reports and recommendations regarding each claim to the secretary of state for external affairs and the minister of finance, stating whether a claimant is eligible to receive a payment under regulations promulgated from time to time by order-in-council. Claims against Hungary, Romania, Poland and Czechoslovakia have been referred to the commission. The claims against the two first-mentioned countries have been dealt with and in 1980 the commission still had before it a small number of claims against Poland and Czechoslovakia. A reference to the commission of claims against Cuba was anticipated in 1980.

Foreign Investment Review Agency. The agency was established in April 1974 by proclamation of the Foreign Investment Review Act (SC 1973-74, c.46). It assesses whether there is or will be significant benefit to Canada in proposals by non-Canadians regarding acquisition of control of Canadian business enterprises or establishment of new businesses in Canada. The agency is responsible to the minister of industry, trade and commerce.

Freshwater Fish Marketing Corp. This corporation was established under the Freshwater Fish Marketing Act of 1969 (RSC 1970, c.F-13) and given the function of marketing and trading in fish, fish products and fish byproducts in and out of Canada with the objectives of ensuring more orderly marketing for the benefit of the whole fishery and achieving higher and more stable prices for the catch. The corporation received a grant for initial operating and establishment expenses but conducts its operations on a self-sustaining basis without parliamentary appropriations; it is financed by bank loans with government guarantee of repayment, or by direct loans. The corporation consists of a board of directors composed of a chairman, a president, one director for each participating province and four other directors appointed by the Governor-in-Council for a term not exceeding five years. The corporation reports to Parliament through the minister of fisheries and oceans.

Grains Group. In 1970 the minister responsible for the Canadian Wheat Board organized a special advisory group on grains (Grains Group) to co-ordinate, review and recommend federal policies for grain production, transportation and handling, and marketing. The minister responsible for the wheat board serves as the chairman of the group. A group co-ordinator and three advisers are drawn from the federal departments of agriculture, industry, trade and commerce, and transport. Offices of the Grains Group are in Ottawa.

Heritage Canada Foundation. Established under the Canada Corporations Act (RSC 1970, c.C-32), the Heritage Canada Foundation is a national trust independent of government. It is concerned with the conservation of buildings, sites and natural areas of importance to the country's heritage. Its work is financed by subscriptions to a bimonthly magazine, contributions and the interest on an endowment fund to which the federal government contributed \$12 million. The foundation seeks to enlist the support of the general public, foundations and corporations; subscriptions are open to anyone. The trust has 10,000 individual members and 200 participating organizations.

Historic Sites and Monuments Board of Canada. The board is the statutory body appointed by the Governor-in-Council to advise the minister of the environment on the commemoration of the nation's history. The Historic Sites and Monuments Act of 1953 (RSC 1970, c.H-6, as amended) provides the statutory base for the operation of the board and defines its role as adviser to the minister who implements and develops a national program of commemorating historic sites. The board determines whether persons, places or events are of national historic significance.

The act provides for 17 members — two representatives each from Ontario and Quebec and one each for the eight other provinces, Yukon and Northwest Territories — appointed by the Governor-in-Council, together with the dominion archivist, one representative from the National Museums of Canada and one from the environment department. The board is comprised for the most part of professional historians, archivists and architects.

Immigration Appeal Board. Established under the Immigration Appeal Board Act (RSC 1970, c.I-3) as a court of record in 1967, and continuing under the Immigration Act 1976, the board is empowered to hear appeals from individuals who are the subject of a deportation or an exclusion order or whose application to sponsor a relative, has been refused under the immigration act. The board also hears applications for the redetermination of status by persons claiming to be refugees in Canada. An appeal from a decision of the Immigration Appeal Board lies to the federal court.

Indian Affairs and Northern Development, Department of (Indian and Northern Affairs Canada). This department was established in June 1966, superseding the Department of Northern Affairs and National Resources; it now operates under authority of RSC 1970, c.I-7. In 1968 the department was reorganized, creating, in addition to departmental support services and an engineering and architectural branch, three distinct program areas: Indian and Inuit affairs, northern affairs, and Parks Canada. In 1979, Parks Canada became the responsibility of the minister of the environment. The Indian and Inuit affairs program is responsible for programs for Canada's 303,000 registered Indians and 6,500 Inuit of Northern Quebec including education, economic development, local government and social assistance. The northern affairs program covers management of all natural resources north of the 60th parallel except game, the protection of the northern environment, government activities in economic development and support of the territorial governments in providing social and other local services. In 1972 a corporate policy group was formed to advise the deputy minister on broad policy questions, in particular those involving co-ordination among the programs and co-operation with other departments and agencies.

The office of native claims, established in the department in 1974, represents the government in both comprehensive and specific claims negotiations with native groups.

The commissioner of Northwest Territories and the commissioner of Yukon report to Parliament through the minister of Indian affairs and northern development. The minister is also responsible to Parliament for the Northern Canada Power Commission.

Industry, Trade and Commerce, Department of. In 1969, the departments of industry and of trade and commerce were merged to form the Department of Industry, Trade and Commerce (ITC), which operates under authority of RSC 1970, c.I-11. ITC promotes establishment, growth and efficiency of manufacturing, processing and tourist industries in Canada and fosters development of trade. Programs assist manufacturing and processing industries in adapting to new technology and changing market conditions, in developing potential and in rationalizing productivity, greater use of research, modern equipment, improved industrial design, the application of advanced technology and modern management techniques, and development and application of sound industrial standards in Canada and in world trade.

The department's functions include: improving access of Canadian goods and services into external markets through trade negotiations; contributing to improvement of world trading conditions; providing support services for industrial and trade development, including information, import analysis and traffic services; analyzing implications for Canadian industry, trade and commerce and for tourism of government policies; contributing to the formulation and review of those policies; and compiling information on trends and developments in Canada and abroad related to manufacturing and processing and tourist industries.

The department is organized into seven major functional groups: economic policy and analysis, finance, industry and commerce development, international trade relations, trade commissioner service and international marketing, tourism and corporate affairs. The department operates 11 regional offices across Canada and a trade commissioner service which has 89 offices in 65 countries.

The minister also reports to Parliament on behalf of the Federal Business Development Bank, the Export Development Corp. and the Canadian Commercial Corp. Boards and other organizations reporting to the minister are the Machinery and Equipment Advisory Board, Design Canada, the Standards Council of Canada, the Textile and Clothing Board, Metric Commission Canada, the Foreign Investment Review Agency, the minister's advisory council and the Canadian Footwear and Leather Institute.

Insurance, Department of. This department, which originated in 1875 as a branch of the finance department, was constituted a separate department in 1910. It is authorized and governed by the Department of Insurance Act (RSC 1970, c.I-17). Under the superintendent of insurance, who is the deputy head, the department administers statutes applicable to federally incorporated insurance, trust, loan and investment companies; provincially incorporated insurance companies registered with the department; British and foreign insurance companies operating in Canada; small loans companies and money-lenders; co-operative credit societies registered under the Co-operative Credit Associations Act; pension plans organized and administered for the benefit of persons employed in connection with certain federal works, undertakings and businesses; and life insurance issued to certain members of the public service prior to May 1954.

Under the relevant provincial statutes, the department examines trust and loan companies incorporated in Nova Scotia, trust companies incorporated in New Brunswick and Prince Edward Island and insurance and trust companies incorporated in Manitoba. The department also provides actuarial services to the government. It reports to Parliament through the minister of finance.

International Boundary Commission. The commission functions by virtue of a 1925 treaty between Canada and the United States and the International Boundary Commission Act (RSC 1970, c.I-19). The commissioners, one for Canada and one for the United States, are empowered to inspect the boundary, to repair, relocate and rebuild monuments, to keep boundary vistas open, to regulate all work within 3.05 m (metres) of the boundary including structures of any kind or earthwork, to maintain at all times an effective boundary line and to determine the location of any point of the boundary line which may become necessary to settle any question that may arise between the two governments. Each country pays the salaries of its commissioner and his assistants and the costs of maintaining the boundary are shared equally. The Canadian section comes under the energy, mines and resources department for administrative purposes but the Canadian commissioner reports functionally to the secretary of state for external affairs. The commissioners meet at least once annually, alternately in Ottawa and Washington.

International Development Research Centre. Established as a public corporation by act of Parliament (RSC 1970, c.21, 1st Supp.), the IDRC is an international organization supported financially by Canada. Its objectives are to initiate, encourage, support and conduct research into the problems of developing countries and into methods of applying and adapting scientific and technical knowledge to their socioeconomic advancement. A chief purpose is to help them develop their own research skills and facilities.

The board of governors consists of 21 members, 11 of whom, including the chairman and the president, must be Canadian. The IDRC reports to Parliament through the secretary of state for external affairs.

International Fisheries Commissions. The minister of fisheries and oceans reports to Parliament on Canadian participation in the several international fisheries commissions of which Canada is a member.

International Joint Commission. This commission was established under a Britain-United States treaty signed in January 1909 and ratified by Canada in 1911 (RSC 1970, c.I-20). The commission, composed of six members (three appointed by the president of the United States and three by the Government of Canada), is governed by five specific articles of the Boundary Waters Treaty of 1909. The commission's approval is required for any use, obstruction or diversion of boundary waters affecting the natural level or flow of boundary waters in the other country; and for any works which, in waters flowing from boundary waters or below the boundary in rivers flowing across the boundary, raise the natural level of waters on the other side of the boundary.

Problems arising along the common frontier are also referred to the commission by either country for examination and report, such report to contain appropriate conclusions and recommendations. Provided both countries consent, questions or matters of difference between the two countries may be referred to the commission for decision.

The commission was given responsibilities under the Canada-United States Great Lakes Water Quality Agreement of 1972 as amended by the international water quality agreement of 1978 to assist in the implementation of the agreement by monitoring the various programs referred to therein in regard to their effectiveness and progress. The commission established a Great Lakes regional office at Windsor, Ont., staffed by American and Canadian public servants; operating costs are shared equally by the two governments.

The commission reports to the secretary of state for external affairs of Canada and to the secretary of state of the United States.

Interprovincial and Territorial Boundary Commissions. The Manitoba-Saskatchewan Interprovincial Boundary Commission and the Alberta-British Columbia Boundary Commission, each consisting of a commissioner from the respective provinces and the surveyor general of Canada, are at present the only commissions concerned with boundaries between provinces. The latter was established in 1974 by federal and provincial Alberta-British Columbia boundary acts to deal with resurveys of the sinuous (heights of land) boundary, the settlement of problems or disputes, and the establishment, restoration and maintenance of survey monuments. The Manitoba-Saskatchewan Boundary Commission as well as commissions responsible for the borders between Saskatchewan and Northwest Territories; Alberta and Northwest Territories; and British Columbia, Yukon and Northwest Territories were established by various orders-in-council to mark or maintain the respective boundaries. All report to Parliament through the minister of energy, mines and resources.

Jacques Cartier and Champlain Bridges Inc. The Jacques Cartier and Champlain Bridges Inc. was incorporated under the Canada Business Corporations Act on November 3, 1978. It operates and maintains the Jacques Cartier and Champlain bridges over the St. Lawrence River at Montreal, Que., on behalf of the St. Lawrence Seaway Authority. It reports to Parliament through the minister of transport.

Justice, Department of (Department of Justice Canada). This department, established by SC 1868, c.39, now operates under authority of the Department of Justice Act (RSC 1970, c.J-2). The minister of justice is the official legal adviser of the Governor General and the Queen's Privy Council for Canada. It is his duty to see that administration of public affairs is in accordance with law, to superintend all matters connected with the administration of justice in Canada that are not within the jurisdiction of the provincial governments, to advise upon the legislation and proceedings of the provincial legislatures, and generally to advise the Crown on all matters of law referred to him by the Crown. The minister of justice is, ex officio, Her Majesty's attorney general of Canada. In this capacity it is his duty to advise the heads of the departments of the federal government on all matters of law connected with such departments, to settle and approve all instruments issued under the Great Seal of Canada, and to regulate and conduct all litigation for or against the Crown in the right of Canada. The minister also recommends to cabinet the selection of judges for the Supreme Court and the Federal Court of Canada as well as judges of superior, county and district courts. Amendments to the Judges Act now provide that the commissioner for federal-judicial affairs rather than the department is responsible for the administration of the Federal Court of Canada and for the administration of the salaries and pensions of other federally appointed judges. Responsibility for administration of the Supreme Court of Canada rests with the registrar. These matters remain the ultimate responsibility of the minister who submits the estimates for such courts and judges to Parliament. The minister of justice reports to Parliament for the Tax Review Board, the Law Reform Commission of Canada and the Canadian Human Rights Commission.

Labour, Department of (Labour Canada). The department was established in 1900 by an act of Parliament (SC 1900, c.24) and now operates under the authority of the Department of Labour Act (RSC 1970, c.L-2). The department administers legislation dealing with fair employment practices; hours of work, minimum wages, annual vacations, holidays with pay, equal wages, group and individual terminations of employment, severance pay and the regulation of fair wages and hours of labour in contracts made with the federal government for construction, remodelling, repair or demolition of any work; government employee compensation, merchant seamen compensation, and employment safety; and transitional assistance benefits for auto workers and adjustment assistance benefits for textile workers and for footwear and tanning workers. It promotes joint consultation with industries through labour management committees and operates a women's bureau. The department issues publications as well as general information on labour management, employment and manpower.

The Merchant Seamen Compensation Board reports to the minister of labour. The department is the official liaison agency between the Canadian government and the International Labour Organization. The Canada Labour Relations Board reports to Parliament through the minister of labour.

Law Reform Commission of Canada. This commission was established (RSC 1970, c.23, 1st Supp.) as a permanent body to study and keep the laws of Canada under continuing and systematic review. The commission makes recommendations for the improvement, modernization and reform of federal laws including, without limiting the generality of the foregoing: the removal of anachronisms and anomalies in the law; the reflection in and by the law of the distinctive concepts and institutions of the common law and civil law legal systems in Canada, and the reconciliation of differences and discrepancies in the expression and application of the law arising out of differences in those concepts and institutions; the elimination of obsolete laws; and the development of new approaches to and new concepts of the law in keeping with and responsive to the changing needs of Canadian society and its individual members. The commission reports to Parliament through the minister of justice.

Library of Parliament. This library was established by an act in relation to the Library of Parliament (SC 1871, c.21) now the Library of Parliament Act (RSC 1970, c.L-7). The library had been formed initially by

the amalgamation of the legislative libraries of Upper and Lower Canada following their unification as the Province of Canada in 1841. The library is designated as a department within the meaning and purpose of the Financial Administration Act, the parliamentary librarian holding the rank of deputy minister. The parliamentary and the associate parliamentary librarians are appointed by the Governor-in-Council. The parliamentary librarian under the speaker of the Senate and the speaker of the House of Commons, assisted by a joint committee appointed by the two houses, is responsible for the control and management of the library including the branch libraries, the parliamentary reading room and the Confederation Building reading room. Persons entitled to borrow from the library are the Governor General, members of the Privy Council, the Senate and the House of Commons, officers of the two houses, judges of the Supreme Court of Canada and Federal Courts of Canada, and members of the Parliamentary Press Gallery. Research services to parliamentarians include the preparation of in-depth studies, background papers and current issue reviews. Additionally, research officers provide oral briefings or continuing assistance to Parliamentary committees. Information and reference services include answering queries; indexing Senate committee minutes of proceedings and reports; maintaining extensive clipping files; providing a daily clipping service, bibliographies on request and computerized literature searches; and acting as an information centre for parliamentary information. The library's collection is accessible to other libraries through interlibrary loan.

Machinery and Equipment Advisory Board. This board, established in 1968, is responsible for considering applications for remission of duty on certain machinery and equipment and advising the minister of industry, trade and commerce as to the eligibility of such machinery for remission of customs duty. The board is composed of a chairman and the deputy ministers of industry, trade and commerce, finance and national revenue. The objective of the machinery program is to increase efficiency in Canadian industry by enabling machinery users to acquire advanced equipment at the lowest possible cost while affording tariff protection on machinery produced in Canada.

Maritime Pollution Claims Fund. Under the Canada Shipping Act (SC 1971, c.27), a strict liability is created on the part of a shipowner discharging oil from a ship in Canadian waters without need to prove fault or negligence; this liability covers cost of remedial action if authorized by the Governor-in-Council, preventive action by the minister of transport and damages suffered by any person. Proceedings are taken against the shipowner and served on the administrator of the fund to make him a party to the litigation; upon failure to recover from the shipowner, the administrator is to the claimant in the position of a guarantor or unsatisfied judgment fund. If the ship cannot be identified, suit may be taken against the administrator. A special claim may be made directly to the administrator by fishermen suffering a loss of revenue resulting from an oil discharge attributable to a ship and not otherwise recoverable at law. The administrator reports annually to Parliament through the minister of transport.

Medical Research Council. Established in 1969 and operating under authority of RSC 1970, c.M-9, the council is a departmental Crown corporation of the federal government. It is composed of a president, a vice-president and 20 members. The primary aim of the council is to support and develop research in the health sciences in Canadian universities and affiliated institutions. It reports to Parliament through the minister of national health and welfare.

Merchant Seamen Compensation Board (Merchant Seamen Compensation Board Canada). The board was established by authority of the Merchant Seamen Compensation Act (RSC 1970, c.M-11, as amended) and reports to the minister of labour. The three members are appointed by the Governor-in-Council. The board adjudicates claims for compensation made by injured seamen employed on ships registered in Canada when they are not entitled to workers' compensation under any provincial workers' compensation act or the Government Employees Compensation Act.

Metric Commission Canada. The commission was established by the Metric Commission Order of June 1971. It consists of a chairman and up to 20 part-time commissioners. The executive director is responsible for the direction of the full-time commission staff.

The commission advises the minister of industry, trade and commerce on conversion to the metric system and assists sectors to prepare metric conversion plans. It also disseminates information related to the implementation of these plans and to metric conversion generally as it affects consumers. There are over 100 sector committees covering all areas of the economy. The staff and 12 steering committees play a co-ordinating role for these sector committees, with the major impetus for conversion coming from the committee members who represent industry, labour, consumers, trade, standards and service associations, governments and other concerned bodies.

Each sector committee develops a conversion plan; after liaison with customers, suppliers and other related sectors, the committee recommends the sector plan to a steering committee for concurrence, and the plan is then reviewed and approved by the commission. Both sector plans and national guidelines follow a four-phase program of guideline dates (investigation, planning, scheduling and implementation) to ensure, as far as possible, that the benefits of metric conversion are achieved at minimal cost.

The steering and sector committees monitor the progress of conversion and suggest any necessary modifications to meet changing conditions.

National Advisory Council on Fitness and Amateur Sport. The council was established in 1961 by the Fitness and Amateur Sport Act (RSC 1970, c.F-25) to advise the minister of national health and welfare on matters relating to fitness and amateur sport. The council advising the minister is an autonomous organization, composed of 30 members appointed by the Governor-in-Council, who represent every Canadian province and territory. Its committees — fitness, recreation and sport — meet periodically to discuss and examine matters related to their areas of concern. At least twice a year, a general council meeting is held and recommendations to the minister are formulated. Through numerous programs and operations, the council is involved in improving the participation of all Canadians in physical recreation and amateur sport as well as supporting Canadian athletes. It reports to Parliament through the minister of labour.

National Arts Centre Corp. The act establishing the corporation (RSC 1970, c.N-2) received assent in July 1966. The corporation consists of a board of trustees composed of a chairman, a vice-chairman, the mayors of Ottawa and Hull, the director of the Canada Council, the president of the Canadian Broadcasting Corp., the government film commissioner and nine other members appointed by the Governor-in-Council for terms not exceeding three years, except for the first appointees whose terms ranged from two to four years. The objects of the corporation are to operate and maintain the National Arts Centre, to develop the performing arts in the capital region and to assist the Canada Council in development of the performing arts elsewhere in Canada. The corporation reports to Parliament through the secretary of state.

National Battlefields Commission. This commission was established by an act of Parliament in 1908 (SC 1908, cc.57-58, as amended) to acquire, restore and maintain the historic battlefields at Quebec City to form a National Battlefields Park. Composed of nine members, seven appointed by the federal government and one each by Ontario and Quebec, the commission is supported by the federal government through annual appropriations and is responsible to Parliament through the minister of the environment.

National Capital Commission. This commission is a Crown agency created by the National Capital Act (RSC 1970, c.N-3) to plan for and assist in the development, conservation and improvement of the national capital region. It is composed of 20 members (including the chairman) chosen from across the nation, to ensure that there will be input into its policies and activities from all regions of the country.

The commission is responsible for acquisition, development and maintenance of federal public lands in the capital region; it co-operates with municipalities in developing projects of both national and local interest and it advises the government on the siting and appearance of all federal government buildings in the 2 880 km² (square kilometre) area centred on Parliament Hill in Ottawa. The commission reports to Parliament through the minister of public works.

National Council of Welfare. The council is an advisory body of 21 private citizens, drawn from across Canada and appointed by the Governor-in-Council. Its members include past and present welfare recipients, public housing tenants and other low-income citizens, as well as lawyers, professors, social workers and others involved in voluntary service associations, private welfare agencies and social work education. The council advises the minister of national health and welfare on matters related to welfare. The office of the council carries out research and other support activities for the council.

National Defence, Department of. The department and the Canadian forces operate under the authority of the National Defence Act (RSC 1970, c.N-4). The minister of national defence is responsible for the control and management of the Canadian forces and all matters relating to national defence and for construction and maintenance of all defence establishments and facilities required to defend Canada.

The deputy minister is the senior public servant in the department and the principal civilian adviser to the minister on all departmental affairs. He is responsible for ensuring that all policy direction from the government is reflected in the administration of the department and in military plans and operations. The chief of the defence staff is the senior military adviser to the minister and is charged with the control and administration of the forces. He is responsible for the effective conduct of military operations and the readiness of the Canadian forces to meet the commitments assigned to them by the government.

A defence council, consisting of the minister of national defence as chairman, the deputy minister of national defence, the chief of the defence staff, the vice-chief of the defence staff, the assistant deputy minister (policy), and the deputy chief of defence staff, meets as required to consider and advise on major policy matters. Defence Construction (1951) Ltd. reports to Parliament through the minister of national defence.

National Design Council (Design Canada). The council was established by an act of Parliament in 1961 (RSC 1970, c.N-5) to promote and expedite improvement of design in the products of Canadian industry. The council makes recommendations on design policies and programs, and works with departments and

agencies of the federal government, regional governments and other private and institutional bodies on design-related issues.

Council-sponsored activities include awards for design excellence, scholarships, publications, exhibits and design management seminars; all intended toward the promotion of product design in Canadian industry. Design Canada (industry, trade and commerce), serves as the administrative and program implementation arm of the council. The council has 17 members appointed by the Governor-in-Council and reports through its chairman to the minister of industry, trade and commerce.

National Emergency Planning Establishment (Emergency Planning Canada). In April 1974, Canada Emergency Measures Organization (EMO), the federal co-ordinating agency for civil emergency planning, became the National Emergency Planning Establishment, commonly known since 1975 as Emergency Planning Canada (EPC). EMO was originally created to initiate and co-ordinate the civil aspects of defence policy delegated to federal departments and agencies to meet the threat of nuclear war.

Emergency Planning Canada has an extended role to co-ordinate and assist planning to ensure that the federal government is ready to meet the effects of natural or man-made disasters. Such planning is part of the normal responsibilities of federal government departments, Crown corporations and agencies. An EPC regional director in each provincial capital maintains contact with other federal departments and with provincial and municipal governments.

EPC promotes emergency preparedness of the federal government and encourages other levels of government to plan by providing grants for approved emergency planning projects; making arrangements for federal assistance to provinces to offset costs resulting from emergencies; sponsoring courses for representatives from the public and private sectors; and conducting an information and research program.

Civil emergency preparedness extends beyond the borders of Canada to nations abroad, including the US and NATO countries. The director general of Emergency Planning Canada represents Canada on the senior civil emergency planning committee and is chairman of the civil defence committee. Although attached for purposes of administration to the defence department, the agency receives functional direction from the Privy Council office.

National Energy Board. This board was established under the National Energy Board Act, 1959 (RSC 1970, c.N-6) to assure the best use of energy resources in Canada. The board, composed of nine members, is responsible for regulating construction and operation of oil and gas pipelines that are under the jurisdiction of Parliament, tolls charged for transmission by oil and gas pipelines, export and import of gas and oil, export of electric power, and construction of lines over which power is exported or imported. Under the Petroleum Administration Act, 1975, the board administers the export charge on crude oil and certain refined petroleum products and administrators, on behalf of the minister of energy, mines and resources, the pricing of natural gas entering interprovincial and international trade.

The board is required to study and keep under review all matters relating to energy under the jurisdiction of Parliament and to recommend measures it considers necessary and advisable. It reports to Parliament through the minister of energy, mines and resources.

National Farm Products Marketing Council. Established in 1972 under the Farm Products Marketing Agencies Act (SC 1972, c.65), the council consults with producers, commodity boards, processors, consumer groups, and provincial and federal governments, and co-ordinates their views on the establishment and operation of national marketing agencies. It assists and supervises the operations of agencies and promotes more effective marketing of farm products in interprovincial and export trade. The goal is to maintain and promote an efficient, competitive and expanding agricultural industry, and to have due regard for the interests of those affected by the operations of national agencies. Three such agencies are in operation — the Canadian egg marketing agency, the Canadian turkey marketing agency and the Canadian chicken marketing agency.

The council consists of a chairman, a vice-chairman, and six other members appointed by the Governor-in-Council and is directly responsible to the minister of agriculture. Council headquarters is in Ottawa.

National Film Board. The board, established in 1939, operates under the National Film Act (RSC 1970, c.N-7) which provides for a board of governors of nine members: a government film commissioner, appointed by the Governor-in-Council, who is chairman of the board, three members from the public service of Canada and five members from outside the public service. The board reports to Parliament through the secretary of state. It is responsible for advising the Governor-in-Council on film activities and is authorized to produce and distribute films in the national interest and, in particular, films designed to interpret Canada to Canadians and to other nations. The board is responsible for co-ordinating all film and audio-visual production required by government departments, producing the material itself or tendering contracts to Canadian companies in the private sector. Its head office is in Ottawa and its operational headquarters is in Montreal.

National Harbours Board (Harbours Board Canada). The board was established by an act of Parliament in 1936 (RSC 1970, c.N-8). It is responsible for the administration of port facilities at the harbours of St.

John's, Nfld.; Halifax, NS; Saint John and Belledune, NB; Sept-Îles, Chicoutimi, Baie-des-Ha! Ha!, Quebec City, Trois-Rivières and Montreal, Que.; Churchill, Man.; Vancouver and Prince Rupert, BC; and the grain elevators at Prescott and Port Colborne, Ont. The board reports to Parliament through the minister of transport.

National Health and Welfare, Department of (Health and Welfare Canada). This department was established in October 1944 under the Department of National Health and Welfare Act (RSC 1970, c.N-9). The deputy minister of national health and welfare administers eight branches: health services and promotion, health protection, medical services, administration, social services programs, income security programs, policy planning and information, and intergovernmental and international affairs.

Departmental programs on health include hospital insurance and diagnostic services, medical care insurance, extended health care, health resources, food and drug supervision, narcotics control, federal emergency services, environmental health, adverse drug reaction reporting, operation of a central clearing house for poison control centres, health, medical and hospital services to status Indians and Inuit across Canada and all residents of Yukon and Northwest Territories, family planning grants and information, and government employee health services as well as assistance and consultation services to the provinces on request to assist the development and improve the efficiency and effectiveness of health services.

Welfare programs include the Canada Pension Plan, old age security, guaranteed income supplements and spouses' allowances, family allowances and the Canada Assistance Plan. There are also developmental programs, including national welfare grants, and grants to groups of retired persons. Bureaus on aging and rehabilitation provide consulting services on issues related to aging and the aged and on programs to enhance the integration of disabled persons into their communities and society.

The National Council of Welfare reports directly to the minister who also reports to Parliament for the Medical Research Council.

National Library of Canada. The library came into existence in January 1953 with the proclamation of the National Library Act (RSC 1970, c.N-11). The library compiles and maintains a national union catalogue, representing the holdings of more than 300 Canadian libraries, to facilitate the interlibrary loan of books from major collections in the country; it compiles and publishes the national bibliography, *Canadiana*, in order to establish a complete inventory of what is published in Canada or relates to Canada; it administers the legal deposit regulations which require Canadian publishers to deposit copies of their publications with the library. The library's collection of books and documents totals more than 2 million. The national librarian reports to Parliament through the secretary of state.

National Museums of Canada. This is a departmental Crown corporation established in April 1968 by the National Museums Act (RSC 1970, c.N-12) to join under one administration the National Gallery of Canada, the National Museum of Man (including the Canadian War Museum), the National Museum of Natural Sciences, and the National Museum of Science and Technology (including the National Aeronautical Collection). In 1972, the corporation began developing a national program under a national museum policy to increase public access to collections and to help preserve them. Four of the five programs provide services to the Canadian museum community: the Canadian conservation institute, the national inventory program, the international program and the museum assistance programs. Grants to Canadian museums and related institutions are administered under the museum assistance programs. The fifth program, mobile exhibits, is a direct service to the public.

The national museums corporation reports to Parliament through the secretary of state but is administered by its own secretariat under the authority of a board of trustees. The board consists of a chairman, vice-chairman and 12 members, as well as two ex officio members — the director of the Canada Council and the president of the National Research Council.

The purposes of the corporation are to demonstrate the products of nature and the works of man, with special but not exclusive reference to Canada, so as to promote interest therein throughout Canada and to disseminate knowledge thereof. The corporation is empowered to collect, classify, preserve and display objects; undertake or sponsor research; arrange for and sponsor travelling exhibitions of materials in, or related to, its collections; arrange for publication or acquisition and sale to the public of books, pamphlets, replicas and other relevant materials; undertake or sponsor programs for training persons in the professions and skills involved in the operation of museums; and arrange for or provide professional and technical services to other organizations whose purposes are similar to those of the corporation.

National Parole Board (Parole Board Canada). The board was established in 1959 by the Parole Act (RSC 1970, c.P-2); it has exclusive jurisdiction and absolute discretion to grant, deny or revoke day parole and full parole for inmates in both federal and provincial prisons, except for cases under the jurisdiction of provincial parole boards. The board is ultimately responsible for granting unescorted temporary absences, but in some instances delegates this authority to directors of institutions. The board also has the authority to revoke mandatory supervision.

The board has jurisdiction over persons who are serving a sentence of imprisonment as a result of any federal offence but it has no jurisdiction over juveniles in the meaning of the Juvenile Delinquents Act, or

over anyone in custody who is serving a sentence intermittently. The board has authority to impose the conditions under which the parolee or inmate under mandatory supervision will live in the community. The board has responsibility under the Criminal Records Act to make recommendations to the solicitor general concerning applications for pardon.

The National Parole Board comprises 26 full-time members appointed for a period up to 10 years by the Governor-in-Council on the recommendation of the solicitor general. Temporary members may be appointed for terms not exceeding one year to substitute for full-time members or to assist the board with unusually heavy case loads. Representatives from police forces, local governments, professional associations, trade unions, or community associations in the five regions of Canada serve on regional panels as community board members. They are designated by the solicitor general to act as regular board members when release is being considered for inmates convicted of murder, or inmates serving sentences of preventive detention as dangerous offenders, habitual criminals or dangerous sexual offenders. The board reports to Parliament through the solicitor general.

National Research Council of Canada (National Research Council Canada). The National Research Council (NRC) is a Crown corporation established by Parliament to undertake, assist and promote engineering and scientific research in furthering Canada's development. The council operates 11 laboratory divisions as well as the Canada Institute for Scientific and Technical Information.

A governing council of 21 members, drawn from across the country and appointed by the government, provides the overall supervision and direction to NRC's research programs and policies. Particular projects are undertaken by the council's laboratories at the request of, or in consultation with, federal government departments, provincial and municipal governments, industry in Canada and other organizations or groups in the public or private sector. The council initiates research projects deemed to be of special importance to Canada and devotes approximately 25% of its intramural research effort to promising basic and exploratory research. Extramural research is supported by the council through financial assistance to selected projects in industry in Canada. Special emphasis is given toward ensuring that maximum national benefit accrues from the research undertaken extramurally with council support. Methods have been developed for transferring technology to industry and to the public sector, and for the publication and diffusion of research results and technical information. NRC reports to Parliament through a designated minister.

National Revenue, Department of (Revenue Canada Customs and Excise; Revenue Canada Taxation). From Confederation until 1917, customs and inland revenue acts were administered by separate departments. In 1917 the federal government passed the Income War Tax Act, as a temporary measure, administered by a commissioner of taxation attached to the finance department. The national revenue department was established in 1927 with two separate components, taxation and customs and excise. Each of these components under one minister operates with its own deputy minister and departmental organization.

The customs and excise component is responsible for assessment and collection of customs and excise duties as well as of federal sales tax and excise taxes. The taxation component is responsible for assessment and collection of taxes under the Income Tax Act of Canada (RSC 1970-71-72, c.63 as amended) as well as contributions under the Canada Pension Plan Act and premiums under the Unemployment Insurance Act. Under an agreement with the provinces, the taxation component assesses and collects corporate and individual income tax for most of the provinces. Quebec, Alberta and Ontario administer their own provincial corporate income tax and Quebec its own individual income tax and the Quebec Pension Plan.

Natural Sciences and Engineering Research Council. The council was established in 1978 as a Crown corporation under the terms of the Government Organization (Scientific Activities) Act, 1976 (SC 1976-77, c.24) and reports to Parliament through a designated minister. The council is composed of a president, a vice-president, and 20 members representing Canadian universities, industry and labour. It promotes and assists research in the natural sciences and engineering other than the health sciences and advises the minister in respect of such matters relating to such research as the minister may refer to the council for its consideration.

Northern Canada Power Commission. The commission was established by an act of Parliament in 1948 (RSC 1970, c.N-21) to provide power to points in Northwest Territories where a need developed and where power could be supplied on a self-sustaining basis; the act was amended in 1950 to give the commission authority to provide similar services in Yukon. The name of the commission (formerly the Northwest Territories Power Commission) was changed in 1956. It is composed of a chairman and four members appointed by the Governor-in-Council. Of the additional members, one each is appointed on the recommendation of the commissioners of Northwest Territories and Yukon.

Northern Transportation Co. Ltd. NTCL is a Canadian company, incorporated under federal legislation and continued under the Canada Business Corporations Act. It is a proprietary Crown corporation. Except for directors' qualifying shares, all of the issued and outstanding shares are held by the minister of transport

in trust for Her Majesty in right of Canada. NTCL is subject to the Government Companies Operations Act and was proclaimed an agent of Her Majesty in July 1949.

The company provides marine transportation services for bulk and deck cargo in Northern Canada and the Arctic. It has operated throughout the Mackenzie River watershed since 1934, and along the Western Arctic Coast and islands since 1957. Service in the Keewatin was inaugurated in 1975, and NTCL has since provided resupply services to five communities along the west coast of Hudson Bay and Coral Harbour on Southampton Island.

The company has two subsidiaries. Grimshaw Trucking and Distributing provides a general merchandise trucking service in Alberta and Northwest Territories. Another subsidiary, Yellowknife Transportation Co. Ltd., has been inactive since 1966. NTCL reports to Parliament through the minister of transport.

Office of the Administrator under the Anti-Inflation Act. The office was established on December 15, 1975 by the Anti-Inflation Act (SC 1974-75-76, c.75, amended by SC 1974-75-76, c.98 and SC 1977-78, c.26). Although the Anti-Inflation Act ceased to have effect as of January 1, 1979, the office has since then continued to be actively engaged in disposing of matters attributable to the active period of the legislation. The matters are now invariably at the stage of appeals from orders, either before the Anti-Inflation Appeal Tribunal or the courts.

Office of the Auditor General. This office originated in 1878 and currently functions under the Auditor General Act (SC 1976-77, c.34) which was proclaimed as of August 1977. The auditor general is responsible for examining accounts of Canada including those related to the Consolidated Revenue Fund and to public property, and for reporting annually to the House of Commons the results of his examinations. In his report he calls attention to anything of significance that he considers should be brought to the attention of the House of Commons including cases in which he has observed that money has been expended without due regard to economy or efficiency, or satisfactory procedures have not been established to measure and report the effectiveness of programs, where such procedures could appropriately and reasonably be implemented. He also audits the accounts of various Crown corporations and other organizations.

Office of the Chief Electoral Officer. This office was established in 1920 under the provisions of the Dominion Elections Act, now the Canada Elections Act (RSC 1970, c.14, 1st Supp.) as amended. Prior to that time the Dominion Elections Act, 1874 (SC 1874, c.9) assigned to the clerk of the Crown in chancery certain of the duties now carried out by the chief electoral officer. The office is designated as a department within the meaning and purpose of the Financial Administration Act (PC 1903-1952, March 31, 1952). The president of the Privy Council is the minister designated for the purpose of the Financial Administration Act and the Canada Elections Act.

The objectives of the office are to enable Canadians who are eligible to vote to elect members to the House of Commons, and to ensure compliance with the election expenses provisions of the act. The act was amended (SC 1977-78, c.8) to provide for the chief electoral officer to conduct, with the agreement of the commissioner of Yukon or Northwest Territories, the election of members to the respective council pursuant to the applicable territory election ordinance.

The office administers the Ottawa headquarters, reviews and studies electoral procedures and election expenses provisions, and prepares statutory and statistical reports and instruction books for election officers, candidates, and political parties.

The office exercises general direction and supervision over the administrative conduct of elections: training federal and territorial returning officers, revising boundaries of polling divisions, acquiring election material and supplies for returning officers, and making statutory payments to auditors, political parties and candidates where specified by the act.

When the position of representation commissioner was abolished by the Government Organization Act, 1979 (SC 1978-79, c.13) the chief electoral officer assumed duties under the Electoral Boundaries Readjustment Act. After each decennial census, the chief electoral officer prepares maps showing population distribution in each province and sets out alternative proposals respecting the boundaries of electoral districts. These maps are supplied to the 11 electoral boundaries commissions (one for each province and one for Northwest Territories) established under the provisions of the Electoral Boundaries Readjustment Act (RSC 1970, c.E-2). The president of the Privy Council acts as spokesman for the office in the cabinet and the House of Commons.

Office of the Co-ordinator Status of Women (Status of Women Canada). The office received official status in April 1976 by order-in-council PC 1976-779. The co-ordinator reports to the minister of state for the status of women. Status of Women Canada advises the minister on federal government policies and programs; monitors legislation, policies and programs of federal departments that have an effect on the status of women; co-ordinates and develops new initiatives to improve the status of women; performs a liaison function with non-governmental organizations, with the Canadian Advisory Council on the Status of Women, with United Nations commissions and conferences on women and with provincial and territorial government responsibility centres; and administers a special fund for the status of women. The office, in Ottawa, carries on work begun in 1970 in the Privy Council office.

Oil and Gas Committee. This committee, established under the (Canada) Oil and Gas Production and Conservation Act [RSC 1970, c.O-4 amended by RSC 1970 c.30 (1st supp.), SC 1970-71-72, c.1] has full jurisdiction to inquire into, hear and determine, and to make any order, or give any direction that pursuant to the act the committee is authorized.

The committee consists of five members, not more than three being employees of the public service of Canada and one member designated chairman. The committee is under the direction of the minister of Indian affairs and northern development and the minister of energy, mines and resources, each in relation to any area in which that minister has administrative responsibility for natural resources.

Patent Appeal Board (Patent Appeal Board Canada). This is an advisory body established in 1970 under the Patent Act (RSC 1970, c.203). Its function is to review rejections of applications for patents of invention when applicants request review, to conduct hearings to consider arguments of applicants, and to make recommendations to the commissioner of patents for ultimate disposition of the applications. It acts in a similar capacity with delegated powers from the minister of consumer and corporate affairs under the Industrial Design Act (RSC 1970, c.150) to consider rejections of industrial design applications made by the registrar of copyright and industrial design. The board consists of a chairman, a vice-chairman and one other member.

Pension Appeals Board. This board, established under the Canada Pension Plan Act (RSC 1970, c.C-5) hears appeals under the Canada Pension Plan and under certain provincial pension plans. It also hears appeals from certain decisions of the umpire under the Unemployment Insurance Act (SC 1971, c.48) as amended. The board consists of two judges of the Federal Court of Canada or of a superior court of a province appointed as chairman and vice-chairman, and from one to eight other persons, each a judge of the federal court or of a superior, district or county court of a province. For appeals under the Canada Pension Plan, the board reports to Parliament through the minister of national health and welfare.

Pension Review Board (Pension Review Board Canada). The board was created under the minister of veterans affairs by amendments to the Pension Act 1971 (SC 1970-71, c.31). Further amendments were made in May 1977, by the Act to Amend the Pension Act (SC 1976-77, c.13). Composed of a chairman, deputy chairman and five other members, the board is an independent and autonomous body that hears appeals in the Ottawa region from pension applicants dissatisfied with decisions of an entitlement board or two members of the Canadian Pension Commission. The board is also the responsible body when matters of interpretation of the acts are at issue.

Petro-Canada. In July 1975 the Petro-Canada Act (SC 1974-75-76, c.61) established Petro-Canada as a Crown corporation to increase the supply of energy available to Canadians, to assist the government in formulating its national energy policy and to increase the Canadian presence in the petroleum industry. The corporation consists of a board of directors composed of a chairman, president and not more than 13 other persons appointed by the Governor-in-Council. Its head office is at Calgary, Alta. The corporation reports to Parliament through the minister of energy, mines and resources.

Petroleum Compensation Board. The board, originally known as the Energy Supplies Allocation Board, was established by the Energy Supplies Emergency Act (1974) and continued in existence through section 68 of the Petroleum Administration Act (PAA). The board was renamed the Petroleum Compensation Board by an amendment to the PAA on April 20, 1978. It has five members, including a chairman and vice-chairman. All members are full-time employees of the energy, mines and resources department. The principal responsibilities of the board are the administration of an oil import compensation program, a petroleum research compensation program and a petroleum administration act levy.

Pilotage Authorities. The Pilotage Act (SC 1971, c.52) established pilotage authorities for the Atlantic, Laurentian, Great Lakes and Pacific regions as proprietary corporations as specified in the Financial Administration Act. The objectives of each authority are to establish, operate, maintain and administer in the interests of safety an efficient pilotage service within the region set out in respect of the authority. Each of the four authorities has a chairman and not more than six other members appointed by the Governor-in-Council for a term not exceeding 10 years. The pilotage authorities report to Parliament through the minister of transport.

Post Office Department (Canada Post). Administration and operation of the post office, by virtue of the Post Office Act (RSC 1970, c.P-14) and under the postmaster general, comprises all phases of postal activity, personnel, mail handling, transportation of mails by land, water, rail and air and the direction and control of financial services including the operation of the money-order service.

Department headquarters is in Ottawa, with regional headquarters in Halifax, Montreal, Toronto and Vancouver, and district offices in St. John's, Halifax, Saint John, Quebec City, Montreal, Ottawa, North Bay, Toronto, London, Winnipeg, Saskatoon, Edmonton and Vancouver.

Prairie Farm Rehabilitation Administration. The Prairie Farm Rehabilitation Administration (PFRA) was established in 1935 (RSC 1970, c.P-17) to assist in the mitigation of drought in Manitoba, Saskatchewan and Alberta. PFRA became an agency of the regional economic expansion department (DREE) when it was formed in 1969. It operates 89 community pastures on 929 000 ha (hectares) of land, submarginal for cereal production. PFRA has constructed many large irrigation and water storage projects and assisted technically and financially in 152,000 dugouts, wells, dams and irrigation projects for on-farm water supplies. A PFRA tree nursery has distributed more than 400 million tree seedlings to farmers for farm and field shelterbelts. Until 1982 PFRA will be engaged in a \$15.3 million water development and drought proofing project, which began in 1979, cost shared with Saskatchewan.

Privacy Commissioner. A member of the Canadian Human Rights Commission is designated by the minister of justice on the recommendation of the chief commissioner to act as privacy commissioner. The office was established by the Canadian Human Rights Act (SC 1976-77, c.33) to receive, investigate and report on complaints from individuals who allege that they have not been accorded the rights stipulated in the Human Rights Act to which they are entitled; namely, the right of access to, correction of, or comment upon personal information about them in federal information banks. Every investigation by the privacy commissioner is conducted in private. The commissioner reports to Parliament through the minister of justice.

Privy Council Office. For administrative purposes, the office is regarded as a department of government for which the prime minister has responsibility as set forth in order-in-council PC 1962-240. The clerk of the Privy Council, under whose direction its functions are carried out, is considered as a deputy head and takes precedence among the chief officers of the public service. The genesis of the office is in Sections 11 and 130 of the British North America Act, 1867, which constituted a council to aid and advise in the Government of Canada, to be styled the Queen's Privy Council for Canada. In 1940, with the wartime development of cabinet committees and the consequent need for orderly secretarial procedures such as agenda, explanatory memoranda and minutes, the clerk of the Privy Council was designated secretary to the cabinet, and the cabinet secretariat was brought into being in the Privy Council office. Since 1946, the office has been further reorganized, developed and enlarged and certain of its administrative support functions and those of the prime minister's office have been closely integrated in the interests of efficiency and economy.

The organization consists primarily of the cabinet secretariat with two divisions reporting to the clerk of the Privy Council and secretary to the cabinet and to the associate secretary to the cabinet. Each division contains a number of secretariats that support the cabinet and its committees. The secretariats prepare and circulate agenda and necessary documents to ministers, and record and circulate decisions. They communicate with government departments and agencies and provide advisory support for the prime minister. Other sections of the office advise the prime minister on senior appointments, constitutional matters, emergency planning, and the exercise of his prerogative to allocate responsibilities between ministers. Submissions to the Governor-in-Council are received, draft orders and regulations are prepared, approved orders are circulated and the federal statutory regulations are edited, registered and published in the *Canada Gazette*.

Public Archives of Canada (Public Archives Canada). The public archives was founded in 1872 and is administered under the Public Archives Act (RSC 1970, c.P-27) by the dominion archivist who has the rank of a deputy minister and reports to Parliament through the secretary of state. Its purpose is to assemble, conserve and make available a comprehensive collection of source material relating to the history of Canada. It also has broad responsibilities to promote efficiency and economy in the management of federal government records. The archives branch in the National Library and Archives Building is a centre for research on the development of Canada. In addition to selected records of the federal government, it possesses an extensive collection of private papers of individuals and societies, a map collection which is the most important of its kind in the country, and extensive collections of paintings, drawings, prints, photographs, machine readable data, sound recordings and films relating to Canada. A specialized library is also at the disposal of researchers. The records management branch operates a large records centre in Ottawa, and regional centres in Toronto, Montreal, Vancouver, Edmonton, Winnipeg and Halifax where non-current departmental records are centralized, stored and serviced and assists departments in their records management programs. The departmental administration operates the central microfilm unit for federal departments.

Under the terms of the Laurier House Act (RSC 1952, c.163), the public archives is responsible for the administration of Laurier House in Ottawa as a museum.

Public Service Commission. Arrangements were made for civil service appointments under the first Civil Service Act of 1868 but the first civil service commission was not created until 1908. This introduced the principle of selection by merit as established by competitive examination. The Civil Service Act of 1918 gave the commission authority to control recruitment, selection, appointment, classification and organization and to recommend rates of pay. The Civil Service Act of 1961 strengthened the principles of

the merit system, clarified the commission's role in other areas of personnel administration, and gave staff associations the right to be consulted on remuneration and conditions of employment.

The Public Service Employment Act (RSC 1970, c.P-32) which came into force in March 1967, redefined the commission's role as the central staffing agency and extended its authority to cover certain groups of employees exempt from the previous acts. The public service is specified in the Public Service Staff Relations Act. It does not include Crown corporations, such as the Canadian Broadcasting Corp., Canada Mortgage and Housing Corp., Canadian National Railways and Air Canada. The new act reaffirmed the merit principle, and permitted delegation of the commission's authority, although not its responsibility to Parliament. Under the act, the commission was relieved of responsibility for recommending rates of pay and conditions of service to the government, for classification, and for consultation with staff associations on matters that are now the subject of collective bargaining.

By orders-in-council of 1972 and 1976, the commission was assigned the duty of investigating cases of alleged discrimination on grounds of sex, race, national origin, colour or religion with respect to the application and operation of the Public Service Employment Act; the appeals and investigation branch is responsible for this function.

The Public Service Commission reports directly to Parliament. The secretary of state has traditionally been the minister who presents the commission's report to the House of Commons, and answers parliamentary questions on the commission's behalf.

Public Service Staff Relations Board. The Public Service Staff Relations Board is an independent body responsible for administration of the Public Service Staff Relations Act (RSC 1970, c.P-35, as amended by SC 1972, c.18, SC 1973-74, c.15 and SC 1974-75-76, c.67), which established a system of collective bargaining for the public service. Responsibilities include determination of bargaining units, certification and decertification of bargaining agents, arbitration of interest disputes, and adjudication of rights disputes under collective agreements.

The board consists of a chairman, vice-chairman, not less than three deputy chairmen and other full-time members and part-time members as the Governor-in-Council considers necessary. All full-time appointments are not to exceed seven years except for the chairmen whose appointments are not to exceed 10 years. Part-time members are appointed to adjudicate grievances or render arbitral awards. The board reports to Parliament through a designated minister, at present the president of the Privy Council.

A pay research bureau, administered by the board, conducts surveys on rates of pay, employee earnings, conditions of employment and related practices both inside and outside the public service, relative to collective bargaining. Advice on planning survey activities is given by an advisory committee on pay research, composed of representatives of employers and bargaining agents.

Public Works, Department of (Public Works Canada). This department was constituted in 1867 and operates under the legislative authority of the Public Works Act (RSC 1970, c.P-38, as amended). It is the primary agent of the federal government in the development and management of real property, providing office accommodation for some 90 federal departments and agencies, together with architectural, engineering, construction management and realty services for special purpose facilities. The department also has responsibilities in transportation (roads) and marine (dredging) works. It is decentralized, with regional headquarters at Halifax, Montreal, Ottawa, Toronto, Edmonton and Vancouver, and subsidiary offices in all but the national capital region. Main line functions are design and construction, realty planning and development and realty services plus departmental planning and co-ordination (including policy research); in addition, the dominion fire commissioner operates under the authority of the minister of public works, with responsibility for protection of life of occupants of government property and for the minimization of property loss as a result of fire.

Queen Elizabeth II Canadian Research Fund. The Queen Elizabeth II Canadian Research Fund Act (SC 1959, c.33) established a fund of \$1 million to be administered by a board of trustees to aid in research on children's diseases. The prime minister reports to Parliament on operations of this fund.

Regional Development Incentives Board. This board was established under the Regional Development Incentives Act 1968-69 (RSC 1970, c.R-3). It provides advice to the minister of regional economic expansion on matters respecting the administration of the act, particularly on applications for incentives relating to projects over a specified size or involving loan guarantees or sensitive industries. The board meets monthly and consists of representatives of various federal departments and agencies including environment, finance, the foreign investment review agency, employment and immigration, and industry, trade and commerce.

Regional Economic Expansion, Department of. This department was established in 1969 (RSC 1970, c.R-4). Its objective is to combat regional disparities by fostering economic and social development in slow-growth regions of Canada. DREE's present activities are divided into three major areas: general development agreements, industrial incentives and other programs.

Development agreements provide the framework for co-operation in regional development between the federal and provincial governments. They outline mutually agreed upon objectives and a general strategy through which activities are established under subsidiary agreements. A 10-year agreement was signed in 1974 with every province except Prince Edward Island, where a comprehensive 15-year development plan providing essentially the same framework was signed in 1969. Activities under subsidiary agreements include forestry, agriculture, fisheries, tourism, industrial development, northlands, mineral development and planning.

The Regional Development Incentives Act (RDIA), passed in 1969 and extended to 1981, provides grants to business and industry to establish, expand or modernize manufacturing and processing facilities in designated regions which cover all the Atlantic provinces, Manitoba, Saskatchewan, Yukon and Northwest Territories, and parts of Ontario, Quebec, Alberta and British Columbia.

Special investment incentives for selected industries in metropolitan Montreal have been established under the Department of Regional Economic Expansion Act. Incentives for a wider range of industries are covered in a second zone extending 100 km (kilometres) to the east of Montreal and as far west as Hull.

Other programs include an agricultural and rural development program of activities to improve the social and economic environment of people of Indian ancestry in some rural areas. The department is responsible for the Prairie Farm Rehabilitation Act (PFRA), designed to combat drought and soil drifting on the Prairies. PFRA operates community pastures in the West.

The minister of regional economic expansion reports to Parliament for the Cape Breton Development Corp. He is advised by the Atlantic Development Council on policies and programs for future economic development and social adjustment in the Atlantic region. The department has headquarters in Hull, Que., regional offices at Moncton, Montreal, Toronto and Saskatoon, a provincial office in each provincial capital, and various branch offices.

Restrictive Trade Practices Commission. The commission was established by the Combines Investigation Act (RSC 1970, c.C-23 as amended by SC 1974-75-76, c.76). In respect of trade practices contained in Part IV. 1 of the act, on application of the director of investigation and research and after holding a hearing at which evidence is submitted by the director and by the party against whom an order is sought, the commission acting as an independent court of record may issue an order prohibiting the practice. In respect of restrictive trade practices contained in Part V of the act, the commission may hold hearings under Section 47 of the act and appraise evidence submitted by the director and the parties under investigation, to report to the minister of consumer and corporate affairs.

Roosevelt Campobello International Park Commission. Established by the Roosevelt Campobello International Park Commission Act (SC 1964-65, c.19), the commission consists of six members, three appointed by the Government of Canada (one on the recommendation of the New Brunswick government) and three by the government of the United States (one on the recommendation of the state of Maine), to administer the Roosevelt Campobello International Park at Campobello, NB. The Canadian section of the commission reports to Parliament through the secretary of state for external affairs.

Royal Canadian Mint. In operation since January 1908, the mint was first established as a branch of the Royal Mint under the United Kingdom Coinage Act of 1870. In December 1931, by an act of the Canadian Parliament, it became the Royal Canadian Mint and operated as a branch of the finance department. By the Government Organization Act of 1969, the mint became a Crown corporation, reporting to Parliament through the minister of supply and services. It operates under authority of RSC 1970, c.R-8.

The latter change was made to provide for a more industrial type of organization and for flexibility in producing coins of Canada and other countries; buying, selling, melting, assaying and refining gold and other precious metals; and producing medals, plaques and other devices. The mint has a seven-man board of directors appointed by the Governor-in-Council. The master of the mint is its chief executive officer. The chairman of the board is appointed for a four-year period, subject to re-appointment; five other directors, two from inside and three from outside the public service, are appointed for three years. The mint operates basically as a manufacturing enterprise. Financial requirements are provided through loans from the consolidated revenue fund.

Royal Canadian Mounted Police. This civil force, organized and administered by the federal government, was established in 1873 as the North-West Mounted Police. It now operates under authority of the Royal Canadian Mounted Police Act (RSC 1970, c.R-9) and is responsible for enforcing federal laws throughout Canada. By agreement with the governments of eight provinces (all except Ontario and Quebec) it is also responsible for enforcing the Criminal Code of Canada and provincial laws in those provinces, under the direction of their attorneys general, providing police services to 196 municipalities and assuming enforcement responsibilities for criminal, provincial and municipal laws. Yukon and Northwest Territories are policed exclusively by the Royal Canadian Mounted Police. The commissioner, appointed by the Governor-in-Council, has control and management of the force and of all matters connected therewith, under the direction of the solicitor general of Canada.

St. Lawrence Seaway Authority. This authority was established by an act of Parliament in 1951 (RSC 1970, c.S-1) and came into force in July 1954. It was incorporated for the purposes of constructing, maintaining and operating all such works as may be necessary to provide and maintain, either wholly in Canada or in conjunction with works undertaken by an appropriate authority in the United States, a deep waterway between the Port of Montreal and Lake Erie. Three Crown corporations, the Seaway International Bridge Corp. Ltd., the Great Lakes Pilotage Authority, Ltd. and the Jacques Cartier and Champlain Bridges Inc. are subsidiaries of the St. Lawrence Seaway Authority. The authority is composed of a president, a vice-president and a member, and reports to Parliament through the minister of transport.

Science Council of Canada (Science Council Canada). This council was established in 1966 (RSC 1970, c.S-5) and became a Crown corporation on April 1, 1969. It consists of 30 members, each having a specialized interest in science or technology. Members normally hold office for three years. All are appointed by the Governor-in-Council. The duties of the council are to assess in a comprehensive manner Canada's scientific and technological resources, requirements and potential and to make recommendations, to increase public awareness of requirements and of interdependence of various groups in society in the development and use of science and technology. The council reports to Parliament through a designated minister, at present the minister of state for science and technology.

Science and Technology, Ministry of State for (Ministry of State Science and Technology Canada). This ministry was established by order-in-council PC 1971-1695 on August 11, 1971, with the primary purpose of formulating and developing policies in relation to federal government activities that affect the development and application of science and technology. It is organized into a government branch, industry branch, university branch and an administrative division, corporate services branch. The Science Council of Canada, the Natural Sciences and Engineering Research Council and the National Research Council all report to Parliament through the minister of state for science and technology.

Seaway International Bridge Corp. Ltd. This corporation was established under the Companies Act, by letters patent in November 1962 and received its certificate of continuance under the Canada Business Corporations Act on February 20, 1980. It operates the international toll bridge system between Cornwall, Ont. and Roosevelt, NY on behalf of the owners, the St. Lawrence Seaway Authority and the Saint Lawrence Seaway Development Corp. It reports to Parliament through the minister of transport.

Secretary of State of Canada, Department of the. The duties, powers and functions of the secretary of state (RSC 1970, c.S-15) extend to and include all matters over which Parliament has jurisdiction not by law assigned to any other department, branch or agency of the federal government relating to: citizenship; elections; state ceremonial, conduct of state correspondence and custody of state records and documents; encouragement of the literary, visual and performing arts, learning and cultural activities; and libraries, archives, historical resources, museums, galleries, theatres, films and broadcasting.

Responsibilities include those pertaining to the administration of the following branches: cultural affairs including education support, research and liaison, Canada student loans, language programs, state protocol and special events, movable cultural property export control, grants, film festivals, certification of Canadian films, translation bureau; citizenship programs including citizenship registration, multiculturalism, native citizens, women, citizenship participation, official language minority groups and human rights.

The secretary of state reports to Parliament for the Canadian Cultural Property Export Review Board, the Canadian Film Development Corp., the National Arts Centre Corp., the National Film Board, the National Library, the Public Archives, the National Museums of Canada, the Canada Council, the Social Sciences and Humanities Research Council, the Canadian Broadcasting Corp. and the Public Service Commission.

Social Sciences and Humanities Research Council (Social Sciences and Humanities Research Council of Canada). The council was established by the Government Organization (Scientific Activities) Act, 1976 (SC 1976-77, c.24) as a Crown corporation to promote and assist research and scholarship in the social sciences and humanities. The council is composed of the president and of 21 other members, both from the academic community and from other areas of society. It reports to Parliament through the secretary of state.

Solicitor General, Department of the (Solicitor General Canada). Before 1936, the office of the solicitor general was either a cabinet post or a ministerial post outside the cabinet. From 1936 to 1945 the position did not exist, the duties of the office being wholly absorbed by the attorney general of Canada. The Solicitor General Act of 1945 re-established the solicitor general as a cabinet officer. In 1966 a new Department of the Solicitor General was created (RSC 1970, c.S-12); the solicitor general became the cabinet minister with primary responsibility in the fields of corrections and law enforcement. He is responsible for the Royal Canadian Mounted Police and the Correctional Service of Canada and also reports to Parliament for the National Parole Board, an independent agency.

Standards Council of Canada. The council was established by an act of Parliament (RSC 1970, c.41, 1st Supp.) which received royal assent on October 7, 1970. Its objectives are to foster and promote voluntary standardization in fields relating to the construction, manufacture, production, quality, performance and safety of buildings, structures, manufactured articles and products and other goods, including components thereof, not expressly provided for by law, as a means of advancing the national economy, benefiting the health, safety and welfare of the public, assisting and protecting consumers, facilitating domestic and international trade and furthering international co-operation in the field of standards. To this end, the council sponsors the national standards system, a federation of accredited independent Canadian standards-writing, testing and certification organizations and the Canadian national committees responsible for international standardization. The council holds membership in the international organization for standardization and sponsors the Canadian national committee of the international electrotechnical commission. The council has been responsible for co-ordinating the planning and execution of a program for the development of standards in the metric (SI) system. This activity is in support of the overall program being carried out by Metric Commission Canada.

The council consists of not more than 57 members including six federal representatives, 10 representing the provinces and 41 other members. Membership is broadly representative of all levels of government, primary and secondary industries, distributive and service industries, trade associations, labour unions, consumer associations and the academic community. The council reports to Parliament through the minister of industry, trade and commerce.

Statistics Canada. The Dominion Bureau of Statistics was set up by statute in 1918 as the central statistical agency for Canada (SC 1918, c.43). In 1948 this statute, which had been consolidated as the Statistics Act (RSC 1927, c.190), was repealed and replaced by the Statistics Act (RSC 1952, c.257) which was amended by SC 1952-53, c.18, assented to March 31, 1953. The 1971 Statistics Act (SC 1971, c.15) replaced that statute.

The functions of Statistics Canada are to compile, analyze and publish statistical information relative to the commercial, industrial, financial, social and general condition of the people and to conduct regularly a census of population, housing and agriculture as required under the act.

Statistics Canada is a major publication agency of the federal government; its reports cover all aspects of the national economy and social conditions of the country. The administrative head of the bureau is the chief statistician of Canada who has the rank of a deputy head of a department and reports to Parliament through the president of the Treasury Board.

Statistics Canada has offices in St. John's, Halifax, Montreal, Ottawa, Toronto, Winnipeg, Regina, Edmonton and Vancouver with facilities to provide information collected by the bureau and to explain how such data can be used.

Supply and Services, Department of (Supply and Services Canada). This department was established on April 1, 1969 (RSC 1970, c.S-18). It was formed through amalgamation of the departments of defence production and public printing and stationery, the shipbuilding branch of the transport department, the office of the comptroller of the treasury, the central data processing service bureau of the Treasury Board and the bureau of management consulting services from the Public Service Commission. With the disbanding of Information Canada in 1976, two functions, publishing and expositions, became the responsibility of the department.

The department is organized into two major administrations, each headed by a deputy minister. The supply administration is responsible for purchasing, printing, publishing, traffic management, security, equipment maintenance and repair and warehousing and distribution. Since the 1973-74 fiscal year, the supply administration has been on a cost recovery basis for services rendered to its customers. The supply administration has 19 regional or district supply offices across Canada and an overseas supply office in London, England, and in Koblenz, Federal Republic of Germany.

The services administration provides payment or cheque-issuing services for all federal departments, maintains the fiscal accounts of Canada and prepares the public accounts. It offers departments and agencies a broad range of services in management consulting, auditing and computer services. It also provides administrative services for pay, pensions and other employee benefit plans, together with financial management reports and statistical information. Service functions are carried out through regional and district offices throughout Canada and abroad.

The minister of supply and services is also the receiver general for Canada and reports to Parliament for Canadian Arsenals Ltd., Crown Assets Disposal Corp., the Royal Canadian Mint and the Office of the Custodian.

Tariff Board. Constituted in 1931, the board derives its duties and powers from five statutes: the Tariff Board Act (RSC 1970, c.T-1); the Customs Act (RSC 1970, c.C-40); the Excise Tax Act (RSC 1970, c.E-13); the Anti-dumping Act (RSC 1970, c.A-15) and the Petroleum Administration Act.

Under the Tariff Board Act, the board looks into and reports on any matter in relation to goods that, if brought into Canada, are subject to or exempt from customs duties or excise taxes. Reports of the board

are tabled in Parliament by the minister of finance. It is also the duty of the board to inquire into any other matter in relation to trade and commerce that may be referred to it by the Governor-in-Council.

Under the provisions of the Customs Act, the Excise Tax Act and the Anti-dumping Act, the Tariff Board acts as a court to hear appeals from decisions on customs and excise rulings by the national revenue department in respect of excise taxes, tariff classification, value for duty, drawback of customs duties and determination of normal value or export price in dumping matters. Under the provisions of the Petroleum Administration Act, the Tariff Board acts as a court to hear appeals from decisions by the National Energy Board on any charges payable in the exportation of oil, and decisions by the Petroleum Compensation Board on any charges payable on any petroleum or petroleum product. Declarations of the board on appeals are final and conclusive but the acts contain provisions for appeal on questions of law to the Federal Court and thence to the Supreme Court of Canada.

Tax Review Board. This board, formerly the Tax Appeal Board, was created and operates under the provisions of the Tax Review Board Act (SC 1970-71, c.11). The board has jurisdiction to hear appeals by taxpayers against their assessments, under the Income Tax Act, the Estate Tax Act, the Canada Pension Plan and in other acts of Parliament that specify the right to appeal to the board. It has, for the exercise of its jurisdiction, such powers, rights and privileges as are vested in a superior court of Canada. The board consists of no less than three nor more than seven members and at its full complement includes a chairman, an assistant chairman and five members. Its principal office is at Ottawa; the board sits at such times and places throughout Canada as it considers necessary. The board is under the jurisdiction of the minister of justice but is independent of the justice department.

Teleglobe Canada. Created in 1950 by an act of Parliament (RSC 1970, c.C-11), under the name of the Canadian Overseas Telecommunication Corp., this Crown agency operates all overseas communications to and from Canada — whether by undersea cable or international satellite. By means of international switching-centres in Montreal, Toronto and Vancouver, Teleglobe Canada provides public telephone service to over 200 overseas territories. The corporation also provides public message telegraph service, telex, private wire service, data and video transmissions to many points around the world. Teleglobe Canada is the designated operating entity for Canadian participation in the International Telecommunications Satellite organization (INTELSAT) and International Maritime Satellite (INMARSAT) and represents Canada on the Commonwealth Telecommunications Council. It reports to Parliament through the minister of communications.

Telesat Canada. Telesat Canada was incorporated in 1969 by an act of Parliament (RSC 1970, c.T-4) to establish and operate a domestic satellite telecommunication system. It is a commercial venture whose ownership is shared by Canadian telecommunications carriers and the federal government, with possible public participation. It provides telecommunications services for the transmission of television, radio, telephone, teletype and data communications through a microwave link between earth stations and satellites in orbit. Its annual report is tabled in the House of Commons by the minister of communications.

Textile and Clothing Board. This board was established (SC 1971, c.39) to receive complaints and conduct inquiries about textile and clothing goods imported into Canada under such conditions as to cause or threaten serious injury to Canadian production. After its investigative procedures are completed, the board makes written recommendations to the minister of industry, trade and commerce. The board consists of three members appointed by the Governor-in-Council and maintains its head office in the Ottawa region.

Transport, Department of (Transport Canada). The department is a corporate structure which includes Crown corporations with varying degrees of autonomy and groups responsible for operations, review, co-ordination, planning and development, plus central services.

The Canadian air transportation administration provides and operates domestic airway facilities and a national air terminal system. It is responsible for providing and maintaining air traffic control and air navigational services and telecommunications and electronics systems, and for licensing and certification of aviation personnel, commercial operators and aircraft. The administration owns 160 and operates 90 of the 875 licensed land airports in Canada.

The Canadian marine transportation administration co-ordinates activities of the Canadian Coast Guard, the National Harbours Board, the St. Lawrence Seaway Authority and four pilotage authorities. Its operations include management of the St. Lawrence Seaway through the St. Lawrence Seaway Authority; direct supervision of 12 major Canadian harbours and other facilities through the National Harbours Board, with other harbours administered by commissions under the supervision of the department. The Canadian Coast Guard provides marine navigational aids and telecommunications and electronics systems and services, administers regulations related to ship safety, co-ordinates marine pollution counter-measures, and investigates ship casualties. Duties of the fleet include maintaining fixed and floating navigational aids and waterways, ice-breaking and ice escort and marine search and rescue operations.

The Canadian surface transportation administration is responsible for federal involvement in railways, motor vehicle safety, highways, urban transportation and ferries.

A review group conducts studies and evaluations of departmental operations and provides for independent audits of personnel and finance operations, including the development and co-ordination of management information systems and policies. A co-ordinating group advises on departmental policy and maintains intergovernmental, interdepartmental and external liaison related to Transport Canada activities, Arctic transportation and the transport of dangerous goods. A strategic planning group provides guidance for long-term planning and includes a research and development component. There is a Transport Canada research and development centre in Montreal.

Four autonomous Crown corporations, Air Canada, Canadian National Railways, VIA Rail Inc. and the Northern Transportation Co. Ltd. report to Parliament through the minister of transport.

Treasury Board (Treasury Board Canada). The board was established as a committee of the Queen's Privy Council for Canada by order-in-council PC 3 of July 2, 1867, and was made a statutory committee in 1869. The minister of finance was appointed chairman of the board, with four other privy councillors to be designated as members by the Governor-in-Council. The secretary of the board and the members of his staff were employed by the finance department.

By the Government Organization Act, 1966 (SC 1966, c.25) the secretariat was established as a separate department of government with its own minister, the president of the board. The committee constituting the board includes, in addition to the president, the minister of finance and four other privy councillors.

The Financial Administration Act (RSC 1970, c.F-10) defines the board's responsibilities as the central management agency of government. These responsibilities include the organization of the public service, financial management, annual and longer-term expenditure planning, and expenditure control, including allocation of resources among departments and agencies of government; management of personnel functions in the public service; and improvement in the efficiency of management and administration in the public service.

To meet these responsibilities, the board has two administrative arms: the Treasury Board secretariat and the office of the comptroller general. The Treasury Board secretariat is divided into four branches: administrative policy, official languages, personnel policy and program. The office of the comptroller general, created in 1978, has three branches: policy development, program evaluation and management practices.

Uranium Canada, Ltd. This Crown company, incorporated in June 1971 under the Canada Corporations Act (RSC 1970, c.C-32) pursuant to the Appropriation Act No. 1, 1971, and the Atomic Energy Control Act, (RSC 1970, c.A-19) is an agency corporation under the Financial Administration Act (RSC 1970, c.F-10). For all purposes it is an agent of Her Majesty and its powers may be exercised only as such. The shares of the company, with the exception of the qualifying shares of the directors, are held by the minister of energy, mines and resources in trust for Her Majesty. Registered under the trade mark UCAN, the company acted as an agent on behalf of the federal government in acquiring and selling the joint stockpile of uranium concentrates established under an agreement with Denison Mines Ltd. in January 1971. UCAN administers the general stockpile of uranium concentrates acquired by the federal government during the years 1963-70. The objects of the corporation as set out in supplementary letters patent dated June 3, 1975 are to negotiate, execute and perform agreements for the purchase, stockpiling and sale of uranium concentrates, subject to the approval of the Governor-in-Council. The corporation's head office is in Ottawa.

Veterans Affairs, Department of (Veterans Affairs Canada). This department, established in 1944 (RSC 1970, c.V-1), is concerned exclusively with the well-being of veterans, their dependents and certain civilians. The department provides treatment services (hospital, medical, dental and prosthetic), counselling services, education assistance, life insurance, and land settlement and home construction assistance. It has treatment institutions and facilities in two major urban centres and three veterans homes in Canada and maintains administrative offices in the larger cities and in London, England.

The Canadian Pension Commission, the War Veterans Allowance Board, the Bureau of Pensions Advocates, the Pension Review Board and the Army Benevolent Fund Board report to Parliament through the minister of veterans affairs.

VIA Rail Canada, Inc. Incorporated in January 1977 as a subsidiary of Canadian National, VIA Rail Canada, Inc. became a Crown corporation, totally independent of CN in April 1978. The corporation is financed by the federal government. It provides, manages and operates all ex-CN and CP Rail inter-city passenger railway services in Canada. It took over the marketing function in June 1977 and in April 1978 took over management of CN's passenger services. Management of CP Rail's passenger services was taken over September 29, 1978. The corporation consists of a board of directors composed of three to 15 members including a chairman and president. Head offices are in Montreal and the corporation reports to the minister of transport.

War Veterans Allowance Board (War Veterans Allowance Board Canada). This board, established under the authority of the War Veterans Allowance Act, is a quasi-judicial body of eight full-time members,

including a chairman and a deputy chairman, appointed by the Governor-in-Council. It is independent as far as its decisions are concerned and reports to Parliament through the minister of veterans affairs. It is administratively co-ordinated with the department which provides support services required to carry out its tasks. The board has responsibility, under the War Veterans Allowance Act and the Civilian War Pensions and Allowances Act, to advise the minister generally on the legislation and specifically on the regulations; to adjudicate pursuant to specific sections of the legislation where the board has sole jurisdiction; to act as a court of appeal for aggrieved applicants and recipients; and, on its own motion, to review decisions of the district authorities to ensure that adjudication is consistent with the intent and purview of the legislation and that the legislation is applied uniformly throughout Canada. The board may at any time review and alter its own former decisions.

Yukon Territory Water Board. The Northern Inland Waters Act, which came into effect in 1972, established the Yukon Territory Water Board whose objects are to provide for conserving, developing and using the water resources of Yukon for the optimum benefit of all Canadians and residents of Yukon in particular. The board licenses water users. The licences contain terms and conditions regulating the quantity of water to be used and the quality of waste water returned to the environment.

The board consists of nine members, six of them private citizens nominated by the commissioner-in-council of Yukon. Three are federal government members appointed by the minister of Indian affairs and northern development.

List of public general acts of the third session of the 30th Parliament, October 18, 1977 to October 10, 1978, the fourth session of the 30th Parliament, October 11, 1978 to March 26, 1979 and the first session of the 31st Parliament, October 9, 1979 to December 14, 1979, passed in the 26th, 27th and 28th years of the reign of Her Majesty Queen Elizabeth II. For further details the reader should refer to the *Statutes of Canada*, 1977-78 and subsequent editions. The date of royal assent follows each chapter number.

Third session, 30th Parliament

Chapter 1 (December 15, 1977) *An Act to amend the statute law relating to income tax and to provide other authority for the raising of funds.*

Chapter 2 (December 15, 1977) *An Act for granting to Her Majesty certain sums of money for the public service for the financial year ending the 31st March, 1978.*

Chapter 3 (December 20, 1977) *An Act to amend the Canada Elections Act.*

Chapter 4 (February 2, 1978) *An Act to amend the Income Tax Act and to establish the Employment Tax Credit Program.*

Chapter 5 (February 2, 1978) *An Act respecting the reorganization of Air Canada.*

Chapter 6 (March 22, 1978) *An Act for granting to Her Majesty certain sums of money for the public service for the financial year ending the 31st March, 1978.*

Chapter 7 (March 22, 1978) *An Act for granting to Her Majesty certain sums of money for the public service for the financial year ending the 31st March, 1979.*

Chapter 8 (March 22, 1978) *An Act to amend the Canada Elections Act, the Election Expenses Act and the Northwest Territories Act in respect of territorial elections.*

Chapter 9 (March 22, 1978) *An Act to implement treaties on the transfer of persons found guilty of criminal offences.*

Chapter 10 (March 22, 1978) *An Act to amend the Bank Act and the Quebec Savings Banks Act.*

Chapter 11 (March 22, 1978) *An Act to amend the Compensation for Former Prisoners of War Act.*

Chapter 12 (March 22, 1978) *An Act respecting the Electoral Boundaries Readjustment Act (Hochelaga-Maisonneuve).*

Chapter 13 (March 22, 1978) *An Act respecting the Electoral Boundaries Readjustment Act (Humber-Port-au-Port-St. Barbe).*

Chapter 14 (March 22, 1978) *An Act respecting the Electoral Boundaries Readjustment Act (Mégantic-Compton-Stanstead).*

Chapter 15 (March 22, 1978) *An Act respecting the Electoral Boundaries Readjustment Act (Pontiac-Gatineau-Labelle).*

Chapter 16 (March 22, 1978) *An Act respecting the Electoral Boundaries Readjustment Act (Prince Edward-Hastings).*

Chapter 17 (March 22, 1978) *An Act respecting the Electoral Boundaries Readjustment Act (Prince George-Peace River).*

Chapter 18 (March 22, 1978) *An Act respecting the Electoral Boundaries Readjustment Act (Saint-Henri-Westmount).*

Chapter 19 (March 22, 1978) *An Act respecting the Electoral Boundaries Readjustment Act (Sainte-Marie).*

Chapter 20 (April 12, 1978) *An Act to establish the Northern Pipeline Agency, to facilitate the planning and construction of a pipeline for the transmission of natural gas from Alaska and Northern Canada and to give effect to an Agreement between Canada and the United States of America on principles applicable to such a pipeline and to amend certain Acts in relation thereto.*

Chapter 21 (April 12, 1978) *An Act to amend the Cape Breton Development Corporation Act.*

Chapter 22 (April 12, 1978) *An Act to correct certain anomalies, inconsistencies, archaisms, errors and other matters of non-controversial and uncomplicated nature in the Revised Statutes of Canada, 1970, and other Acts subsequent to 1970.*

Chapter 23 (April 20, 1978) *An Act to provide for the continuation of regular postal service operations.*

Chapter 24 (April 20, 1978) *An Act to amend the Petroleum Administration Act and the Energy Supplies Emergency Act.*

Chapter 25 (April 20, 1978) *An Act relating to the discounting of overpayments of tax under the Income Tax Act and related payments.*

Chapter 26 (April 20, 1978) *An Act to amend the Anti-Inflation Act and guidelines.*

Chapter 27 (April 20, 1978) *An Act to amend the Canada Labour Code.*

Chapter 28 (April 20, 1978) *An Act to amend the Farm Credit Act.*

Chapter 29 (April 20, 1978) *An Act to establish the Canadian Centre for Occupational Health and Safety.*

Chapter 30 (April 20, 1978) *An Act respecting the administration and development of certain fishing and recreational harbours in Canada.*

Chapter 31 (June 30, 1978) *An Act for granting to Her Majesty certain sums of money for the Government of Canada for the financial year ending the 31st March, 1979.*

Chapter 32 (June 30, 1978) *An Act to amend the statute law relating to income tax and to authorize payments related to provincial sales tax reductions.*

Chapter 33 (June 30, 1978) *An Act to amend the Financial Administration Act.*

Chapter 34 (June 30, 1978) *An Act to amend the Canadian National Railways Capital Revision Act and the Railway Act and to amend and repeal certain other statutes in consequence thereof.*

Chapter 35 (June 30, 1978) *An Act to amend the Currency and Exchange Act.*

Chapter 36 (June 30, 1978) *An Act to amend the Criminal Code.*

Chapter 37 (June 30, 1978) *An Act to amend the Pension Act and the Compensation for Former Prisoners of War Act.*

Chapter 38 (June 30, 1978) *An Act to amend the Export Development Act.*

Chapter 39 (June 30, 1978) *An Act to require the reporting of certain financial and other statistics relating to the affairs of certain petroleum companies carrying on business in Canada.*

Chapter 40 (June 30, 1978) *An Act to amend the Customs Tariff and to amend An Act to amend the Customs Tariff.*

Chapter 41 (June 30, 1978) *An Act to provide a maritime code for Canada and to amend the Canada Shipping Act and other Acts in consequence thereof.*

Chapter 42 (June 30, 1978) *An Act to amend the Income Tax Act and the Excise Tax Act in matters relating to the ownership and operation of small businesses.*

Chapter 43 (October 10, 1978) *An Act to provide for an additional advance poll in respect of certain by-elections.*

Fourth session, 30th Parliament

Chapter 1 (October 18, 1978) *An Act to provide for the resumption and continuation of postal services.*

Chapter 2 (October 24, 1978) *An Act to provide for the resumption and continuation of shipping on the Great Lakes and certain other waters.*

Chapter 3 (November 20, 1978) *An Act to amend the Old Age Security Act.*

Chapter 4 (November 23, 1978) *An Act to provide supplementary borrowing authority for the fiscal year 1978-79 and to amend the Financial Administration Act.*

Chapter 5 (December 12, 1978) *An Act to amend the Income Tax Act to provide for a child tax credit and to amend the Family Allowances Act, 1973.*

Chapter 6 (December 12, 1978) *An Act for granting to Her Majesty certain sums of money for the public service for the financial year ending the 31st March, 1979.*

Chapter 7 (December 22, 1978) *An Act to amend the Unemployment Insurance Act, 1971.*

Chapter 8 (December 22, 1978) *An Act to authorize the granting of an immediate annuity to the Honourable Mr. Justice Donald Raymond Morand.*

Chapter 9 (December 22, 1978) *An Act to amend the Canada Business Corporations Act.*

Chapter 10 (December 22, 1978) *An Act to amend the Criminal Code.*

Chapter 11 (March 8, 1979) *An Act to amend the Judges Act, to amend An Act to amend the Judges Act and to amend certain other Acts in respect of the reconstitution of the courts in New Brunswick, Alberta and Saskatchewan.*

Chapter 12 (March 8, 1979) *An Act to amend the Health Resources Fund Act.*

Chapter 13 (March 15, 1979) *An Act respecting the organization of the Government of Canada and matters related or incidental thereto.*

Chapter 14 (March 15, 1979) *An Act to amend the Northwest Territories Act.*

Chapter 15 (March 15, 1979) *An Act to exempt certain shipping conference practices from the provisions of the Combines Investigation Act.*

Chapter 16 (March 16, 1979) *An Act to amend the National Housing Act and the Central Mortgage and Housing Corporation Act and to make other related amendments.*

Chapter 17 (March 26, 1979) *An Act to provide a means to conserve the supplies of energy within Canada during periods of national emergency caused by shortages or market disturbances affecting the national security and welfare and the economic stability of Canada.*

Chapter 18 (March 26, 1979) *An Act to amend the Bank Act and the Quebec Savings Banks Act.*

First session, 31st Parliament

Chapter 1 (November 20, 1979) *An Act respecting certain postal rates.*

Chapter 2 (November 20, 1979) *An Act for granting to Her Majesty certain sums of money for the public service for the financial year ending the 31st March, 1980.*

Chapter 3 (November 22, 1979) *An Act to provide supplementary borrowing authority for the fiscal year 1979-80.*

Chapter 4 (November 29, 1979) *An Act to amend the Old Age Security Act.*

Chapter 5 (December 6, 1979) *An Act to amend the statute law relating to income tax and to amend the Canada Pension Plan.*

Chapter 6 (December 6, 1979) *An Act to amend the Customs Tariff and to make certain amendments to The New Zealand Trade Agreement Act, 1932, the Australian Trade Agreement Act, 1960 and The Union of South Africa Trade Agreement Act, 1932.*

Chapter 7 (December 6, 1979) *An Act to confirm the authority of the Federal District Commission to have acquired certain lands.*

Economic chronology

March 1979 - May 1980

Appendix 3

In previous editions of the *Canada Year Book*, Appendix 3 was a general chronology of Canadian events with a bearing on political, social or economic development. This new economic chronology includes not only Canadian items, but also others dealing with the European Economic Community (EEC), Organization for Economic Co-operation and Development (OECD), Organization of Petroleum Exporting Countries (OPEC), the Federal Reserve Board (FRB) of the United States, financial institutions, corporations and events in other countries with effect on the economy of Canada.

This chronology is drawn from the publication *Current economic analysis monthly summary*, produced in the Current Economic Analysis Section, System of National Accounts, Economic Statistics Field of Statistics Canada. The summary includes up-to-date articles on the current state and short-term course of the economy. First produced in limited editions for circulation in Statistics Canada, the publication was scheduled to become available to the public in 1981.

March 1979

Mar. 9, Highlights of the Saskatchewan budget included rebates of \$115 a year on rent paid by tenants and \$250 on mortgage interest paid by home owners, and higher taxes on alcohol and tobacco.

Mar. 13, The EEC launched a new monetary system designed to provide exchange rate stability in Europe and agreed to reduce petroleum imports; the weighted basket of EEC exchange rates in relation to major world currencies was fixed at US\$1.35.

Mar. 27, OPEC announced a rescheduling of its 9.05% increase in crude oil prices; the increase, previously scheduled for October 1, would take effect April 1, and would bring crude oil prices to US\$14.54 a barrel; a meeting of OPEC ministers authorized members to add surcharges up to \$4 a barrel, depending on market demand.

Mar. 29, The Quebec budget speech called for abolition of the sales tax on clothing sales under \$500, on footwear sales under \$100 and on textiles; 12.5% indexing on personal income tax exemptions beginning in January 1980; municipal fiscal reform, and setting up of a plan for shared savings; the projected deficit was nearly \$1.5 billion.

Mar. 30, New Brunswick unveiled a record \$1.6 billion budget; highlights included record capital spending of \$202 million, higher cigarette taxes, limited deterrent fees for people using the medicare program, reduced taxes for small businesses, and a 7.8% limit on the growth of spending on social programs.

April 1979

Apr. 1, The National Energy Board raised the export tax on light crude oil and condensates by \$1 a barrel to \$8, and on heavy crude by \$1.35 a barrel to \$5.70, both changes to take effect immediately; the board also announced that the new export price

of US\$2.30 per thousand cubic feet of natural gas would become effective May 2 rather than May 31 as originally planned. Prices of crude oil from Venezuela, Canada's main supplier of imports, were raised an average of 18% to a range of \$15.39 to \$17.27 a barrel.

Apr. 2, The British Columbia budget was tabled, calling for spending and revenues of nearly \$4.6 billion; highlights included a reduction in the provincial sales tax rate to 4% from 5%, a reduction in the personal income tax rate to 44% from 46% of the federal tax, and an increase of \$100 to \$380 in home-owner grants. General Motors of Canada Ltd. raised new car and truck prices by an average of 2.7%; US prices were raised by an average of 2.1%.

Apr. 3, Down payments on homes financed by CMHC were lowered and the maximum mortgage available raised to \$70,000; the changes allowed 95% financing on the first \$50,000 and 75% on the remainder.

Apr. 4, Chrysler Corp. and Ford Motor Co. raised US car prices by an average of 2.7% and 2.1% respectively.

Apr. 5, Chrysler Canada Ltd. laid off almost 2,100 workers as a result of the strike and lockout of truckers in the United States.

Apr. 6, The Nova Scotia budget was introduced. It called for expenditure of \$1.49 billion, up 4.6% from the previous fiscal year, and revenue of \$1.50 billion; taxes were raised on cigarettes, alcohol and tobacco.

Apr. 9, Ford Motor Co. of Canada Ltd. raised prices by an average of 2.7%. Nickel prices were raised about 11% by Sherriit Gordon Mines, following the lead of Falconbridge Nickel a day earlier.

Apr. 10, The Ontario budget was tabled. It called for total expenditure of nearly \$15.6 billion and revenue of \$14.4 billion, for a deficit of almost \$1.2 billion; highlights included increases of 5.3% in OHIP premiums and to 14% from 13% in the

general corporate income tax; an increase in taxes on cigarettes, beer and fuels; and the removal of retail sales taxes on specified items.

Apr. 25, A contract was approved by 55,000 non-operating railway employees, providing for wage increases of 10% in the first year and 8% in the second and third years, as well as a limited cost of living escalator.

May 1979

May 1, Chrysler Canada Ltd. announced the closing of its Windsor engine plant for two weeks in May and layoff of 550 workers indefinitely thereafter. A Conference Board in Canada survey of major forecasters indicated the average expected growth rate had been lowered to 3% from 3.3% in October, while the anticipated inflation rate had been increased to 8.2% from 7.6%.

May 8, Mexico tentatively agreed to sell Canada up to 100,000 barrels of oil a day for 10 years, beginning with small amounts late in 1979; in return, Mexico would study the feasibility of using CANDU nuclear reactors.

May 15, Falconbridge Nickel and the International Nickel Co. of Canada, Ltd. (Inco) boosted nickel prices about 13.7%. The federal labour department reported that wage settlements in the first quarter of 1979 increased base rates 7.1%, down from 7.7% in the fourth quarter of 1978; the US labour department earlier announced wage increases averaging 6.6% in the first quarter of 1979, up from 6.4% a year earlier.

May 16, The Trendicator of The Royal Bank of Canada, which foreshadows short-term economic conditions, was estimated to have declined 0.4% in the first quarter, following three consecutive increases; building permits were the major source of weakness. The leading indicator of the Canadian Imperial Bank of Commerce declined in February for the first time since April 1978; the bank said that the decline in six of the eight index components suggested the possibility of a slowdown in the third quarter. The Manitoba budget was introduced; highlights included a five-year moratorium on increases in hydroelectric rates, adoption of a single tax rate structure for the mining industry, selective reductions in sales taxes on children's clothing, meals away from home, and secondhand furniture and clothing; the deficit was forecast at \$123 million. Margaret Thatcher became prime minister of Britain; she promised a reduction in personal income taxes, increased defence spending and reduced power for unions; at the same time 600,000 public servants ratified a 25% pay increase over eight months.

May 22, In a federal general election, the Progressive Conservative party won 136 seats, the Liberals 114, New Democratic Party 26 and Social Credit party 6.

May 24, Prime Minister-elect Joe Clark pledged to fulfil campaign promises including a cut of 60,000 jobs from the public service, the privatization of Petro-Canada, lower income taxes, and the imple-

mentation of a mortgage deductability scheme.

May 29, A survey by Wood Gundy reported that debt financing by government and corporations totalled \$2.27 billion in April, versus \$835 million a year earlier.

June 1979

June 4, Inco ended a 12-month strike at Sudbury as 12,000 workers voted to accept a new three-year contract; terms of the agreement called for an immediate increase of 66 cents an hour, with the total value of increased wages and benefits estimated to be \$4.07 an hour over the life of the contract.

June 5, The federal government increased the compensation paid to oil companies for imported crude oil to \$7.50 a barrel, compared to \$3 earlier in the year.

June 6, All major ports in British Columbia were closed as 3,000 longshoremen went on strike; officials estimated that wheat exports were reduced 40,000 tons a day.

June 8, A two-month freeze on public service hiring was announced by Treasury Board President Sinclair Stevens; government departments were instructed to defer discretionary spending.

June 11, Highlights of the BC budget included a 1% cut in the sales tax to 4%, a reduction in income taxes, and higher corporate capital tax exemptions. The Alberta budget called for lower taxes for low-income earners and small businesses, a \$2 billion operating surplus, a \$1.2 billion deposit for the Alberta Heritage Savings Trust Fund, and a \$1 billion grant to municipalities to reduce their debt.

June 13, Morgan Guaranty Trust Co. of New York cut its prime rate 0.25% to 11.5%, following a decline in most short-term interest rates in the United States; the Bank of America, Citibank NA and Chase Manhattan followed this move.

June 15, Ford Motor Co. of Canada Ltd. announced a further one-week layoff of 3,800 employees at its Oakville, Ont. plant beginning June 25; declining full-size car sales in the United States were cited as the major factor. The Ford Motor Co. also announced the layoff of 7,100 employees in the United States for one week to balance inventories.

June 18, Longshoremen at seven West Coast ports returned to work, ending an 11-day strike.

June 21, Energy Minister Raymon Hnatyshyn reaffirmed that a \$1 a barrel increase for crude oil would take place July 1; Mr. Hnatyshyn predicted oil supplies would be tight the following winter, but rationing was not being considered.

June 29, OPEC was unable to agree on a uniform price for oil, and Canada would pay different prices ranging from \$18 to US\$23.50 a barrel. Saudi Arabia, supplier of one-quarter of Canada's oil imports, raised prices from \$14.55 to \$18 a barrel. Venezuela, which supplied about 55%, raised prices from \$16.75 to \$20 a barrel. A ceiling of \$23.50 a barrel on oil prices was agreed upon by OPEC; some confusion remained as to whether and by how much Saudi Arabia would increase supply. In

response to higher oil prices, seven leading industrial nations of the free world including Canada agreed to limit oil imports in 1979 and 1980 at the economic summit held in Tokyo. Canadian government officials had indicated that within the next year the domestic price of oil could rise \$3 to \$4 a barrel above the current price of \$12.75 a barrel. Effective July 1, the export price of crude oil to the United States would be raised 12.8% from \$23.41 a barrel to \$26.41; the wellhead price of the oil would go from \$12.75 to \$13.75 while the levy would be raised from \$10.01 to \$12.01 a barrel.

July 1979

July 13, The federal cabinet approved a 50-cent increase in Canada's natural gas export price bringing it to US\$2.80 per thousand cubic feet effective August 11, 1979; a further increase was expected in early 1980.

July 20, The Newfoundland budget featured higher taxes on cigarettes and car ownership; the tax on cigarettes was raised by 5 cents a package while passenger vehicle registration fees were increased by \$10 for all models; a 4% tax on advertising sales was introduced.

July 21, In Washington, the FRB increased its discount rate from 11.25% to 11.75%, citing weakness in the US dollar and rapid expansion in the money supply as the major reasons.

July 22, The Bank of Canada raised its bank rate from 11.25% to 11.75% in response to the change in the US discount rate.

July 24, Canada's major chartered banks raised their prime lending rates from 12% to 12.5% because of the bank rate increase.

July 30, General Motors (US) announced plans to lay off 12,630 hourly workers at 10 car and truck manufacturing plants in a bid to slash production of 1980 models; the move was the most severe step yet taken by General Motors in response to a deteriorating US new car market.

July 31, In Washington the commerce department's index of leading economic indicators registered a 0.1% decline in June; this followed a 0.3% rise in May and a 2.1% decline in April.

August 1979

Aug. 16, The federal government reaffirmed its promise to reduce the Canadian public service by 60,000 before 1983; Treasury Board President Sinclair Stevens said this goal would be attained by selling off some Crown corporations, hiring only two new public servants for every three departing, and reducing federal-provincial duplication of services.

Aug. 17, The FRB raised its discount rate to 10.5% from 10% in response to recent strong growth in several key monetary aggregates; all major US banks raised their prime lending rates to 12%.

Aug. 29, Led by Chase Manhattan, major US banks raised their prime lending rates to a record 12.25% from 12%.

September 1979

Sept. 4, Chrysler Canada Ltd. announced a customer rebate program ranging from \$100 to \$400 on selected 1979 cars, vans and trucks; the action followed a similar move by Chrysler in the United States. General Motors of Canada Ltd. increased the Canadian wholesale price for its average 1980 model base passenger cars by 2.4% from final 1979 model prices. Nova Scotia Development Minister Roland J. Thornhill announced that Sydney Steel Corp. was cutting production by 25% to 30% and would lay off 800 workers by Nov. 1, due to heavy financial losses and further deterioration of the plant's obsolete facilities.

Sept. 5, The Banque Canadienne Nationale and La Banque Provinciale du Canada announced a merger to form the Banque Nationale du Canada. The Canadian gold maple leaf, Canada's first gold bullion coin, went on sale on the money markets of Canada, the United States and Europe; the selling price would fluctuate from day to day, depending on the world price for gold. The Alberta government announced a decision to open its heritage savings trust fund, worth more than \$5 billion, to corporate borrowing; provincial Treasurer Lou Hyndman predicted such loans could amount to \$100 million during the next 18 months. Prime Minister Joe Clark agreed in principle to give Newfoundland control over its offshore and mineral resources; a similar agreement was reached with Nova Scotia. The Ontario Energy Board approved Ontario Hydro's request to raise rates charged to municipal utilities and direct customers by an average of 8.5%.

Sept. 7, The bank rate was increased by half a percentage point to a record 12.25%, the ninth increase in 21 months.

Sept. 8, Most US banks raised their prime lending rates to 12.75% from 12.25%. The National Energy Board decided to reduce net exports of light crude to the United States to about 14,000 barrels a day effective Oct. 1, down about 75% from 55,000 barrels a day in September; exports of heavy crude would be increased 14.6% to 94,000 barrels daily from 82,000.

Sept. 14, Canada concluded a deal with China calling for delivery of 2 million tonnes of wheat valued at over \$400 million, beginning in October.

Sept. 17, The federal government announced details of a proposed mortgage interest credit plan to be phased in over four years, eventually to provide a maximum credit of up to \$1,250 a year for mortgage interest payments and a flat credit for each home owner of \$250 a year for property taxes; in the first taxation year the maximum mortgage interest credit would be \$312.50 and the property tax credit would be \$62.50, for a total maximum credit of \$375.

Sept. 28, The Ford Motor Co. of Canada Ltd. planned to suspend temporarily car and truck production for one to two weeks at seven plants on October 2, including the one at Oakville, Ont., to help balance inventories. The move would affect 16,400 workers, including 3,400 at Oakville. Trig-

gered by fears of another round of OPEC price increases following Venezuela's 6% hike in oil prices, the US dollar approached record lows amid heavy selling. The Canadian dollar recovered to US 86.15 cents and the British pound strengthened as speculators invested in nations relatively self-sufficient in oil.

October 1979

Oct. 9, In Washington, the FRB announced a number of changes in monetary policy in an attempt to dampen inflation and support the US dollar; the board raised the discount rate a full percentage point to 12%, tightened reserve requirements on short-term certificates of deposit and Eurodollar borrowings, and said future monetary policy would focus directly on bank reserves rather than key interest rates to reduce the growth of the money supply. In a related move, the treasury department announced it was terminating its regular monthly auction of 750,000 troy ounces of gold. Led by Chase Manhattan, all major US banks raised their prime lending rates from 13.5% to 14.5%. The Bank of Canada raised its bank rate from 12.25% to 13% following the increase in the US discount rate.

Oct. 10, Canadian chartered banks raised their prime lending rates to 13.75% from 13%; five-year conventional mortgage rates were raised to 13.5% at some banks and 13.75% at others, and most banks raised the interest rate on bank cards to 21% effective in the spring of 1980.

Oct. 15, Ford Motor Co. of Canada Ltd. raised the average price of 1980 model passenger cars by 3.1%.

Oct. 17, Ontario Hydro announced it would raise its rates in 1980 by 16.4% for municipal utilities and 14.8% for industries.

Oct. 23, Led by Morgan Guaranty Trust Co. of New York and Citibank NA, all major US banks revised their prime lending rates from 14.5% to at least 15%. The Government of Canada reduced the basic tax rate on income of small corporations not eligible for the special 25% tax rate from 46% to 33%; the government retained its definition of small business eligible for the 25% tax rate as a firm with less than five employees.

Oct. 25, General Motors of Canada Ltd. announced it would close its car assembly plant at Ste-Thérèse, Que. for one week beginning Nov. 19 due to declining sales in the United States; the move would affect 3,200 workers. At the same time, the Ford Motor Co. announced layoffs of 8,450 auto workers in the United States for one to two weeks to reduce passenger car and truck inventories. The Bank of Canada raised its bank rate one full percentage point to 14%.

November 1979

Nov. 1, Canada announced it would allow net exports of only 50 barrels a day of light crude oil in November, down from 14,000 in October; the

National Energy Board said Canadian refineries needed the oil to rebuild low inventories in Eastern Canada. The NEB raised permissible exports of heavy crude oils to 122,000 barrels a day in November from 94,000 barrels a day in October.

Nov. 7, General Motors said it would indefinitely lay off 5,570 workers at three different auto plants in the United States and reduce the assembly line speed at others; the moves brought the total number of idled workers at GM to 37,250. At the same time, Ford Motor Co. temporarily suspended car production at six of its 13 US car plants, idling 24,000 workers. Chrysler Corp. announced a one-week suspension of operations at three US plants, affecting 9,200 workers. Auto sales in the United States in the first 10 days of November fell 26% from a year earlier.

Nov. 26, US interest rates declined for the first time in several months as the prime lending rate was cut from 15.75% to 15.5%. Corporate borrowing in November declined by almost \$1 billion following the increase of interest rates in October. The Bank of Montreal, followed by most other banks, reduced its mortgage lending rates from .5 to 1.0 percentage points as demand for mortgage funds tapered off significantly in November.

Nov. 28, United States Steel Corp. announced the most sweeping production cutbacks in memory due to rising costs and weak demand; following a trend that began in the third quarter, plant closings would result in the layoff of an additional 13,000 workers.

December 1979

Dec. 7, Bank of Canada Governor Gerald Bouey was reappointed for another seven-year term by the federal government.

Dec. 11, Gulf Canada Ltd. declared *force majeure* on gasoline supply contracts to independent distributors in Ontario until mid-March; the distributors would have supplies held to the average of the previous 18 months, a drop of 2 million gallons a month. Gulf Canada Ltd. also cut back operating hours at 120 service stations formerly open 24 hours a day. Citing gas shortages due to refinery problems and strong demand, Suncor Inc. reduced hours and raised prices at certain outlets in Ontario and Quebec.

Dec. 13, The seven-month old Progressive Conservative federal government was defeated in the House of Commons following introduction of a budget.

Dec. 20, At December meetings OPEC failed to agree on one price for crude oil exports; Saudi Arabia had raised its price from US\$18 a barrel to \$24 and many OPEC members had decided to raise their prices further since their last meeting; Libya led the price hike with US\$34.50 a barrel while Venezuela and Iraq raised their prices to \$26 a barrel. As a result of these increases, Canadian officials expected that compensation payments for imported oil would rise to \$2 billion in the 1980 fiscal year from \$1.6 billion in 1979.

January 1980

Jan. 22, Cabinet approved a 30% increase in the export price of natural gas sold to the United States. Canadian gas sales were reportedly slipping in the Pacific Northwest where hydroelectric power and high-sulphur fuel oils had been substituted for natural gas while in the midwest coal was being used increasingly. The price hike for natural gas was expected to hurt some export markets.

Jan. 25, After moving down in November and December, US interest rates began to rise again; Citibank raised its prime lending rate from 15% to 15.25%. Beginning January 31 and continuing for an unspecified limited time, Chrysler Canada Ltd. offered a 30-day money-back guarantee to car buyers; Chrysler would also pay \$50 to anyone test driving a Chrysler product and buying a car within 30 days, either from Chrysler or its competitors, a move designed to restore public confidence in Chrysler products.

Jan. 31, Ontario Treasury Minister Frank Miller announced that consumers who purchased 1979 model cars in February would receive a rebate of up to \$700 on the 7% Ontario retail sales tax; the program was intended to clear out the inventory of 1979 cars so dealers could place orders for 1980 models.

February 1980

Feb. 5, Algeria raised the price of its crude oil by \$4.21 to US\$37.21 a barrel, the highest price in OPEC; Indonesia raised its price by \$2 to \$29.50 a barrel. General Motors announced a US\$500 rebate to help move a stockpile of 75,000 1979 cars and vans.

Feb. 8, The Toronto-Dominion Bank raised all its mortgage rates by between .25 and .75 percentage points; most mortgage lenders followed these increases, and raised rates paid on deposits.

Feb. 11, The federal government raised the subsidy on imported crude oil by 70 cents a barrel as a result of price increases by foreign suppliers, bringing the average compensation a barrel to a minimum of \$18; at the current rate, import compensation would cost \$2.6 billion in the next year, according to analysts.

Feb. 12, Ford of Canada spokesmen said the company was giving dealers price reductions up to \$500 in place of the \$300 to \$500 rebates being offered directly to US consumers to stimulate car sales.

Feb. 15, In the United States, a FRB decision to raise the discount rate from 12% to 13% sent a number of commodity prices tumbling in world spot markets: in the following week copper prices fell 15 cents, lumber prices fell by their one-day limits, and prices of agricultural products and precious metals also slipped lower. Analysts interpreted the FRB move as a signal to investors who had fled the money markets to invest in commodities that the board's resolve to fight inflation and rein-in the money supply would not be eroded by the planned increase in defence spending. The

Central Bank of Japan raised its lending rate from 6.25% to 7.25% in response to US moves.

Feb. 18, The Liberal party led by Pierre Elliott Trudeau won a majority in the federal election, following nine months of Conservative government; standings were: Liberals 146, Progressive Conservatives 103, New Democratic Party 32, and there was one vacancy. The OECD forecast zero real growth in its 24-member countries in 1980, down from a prediction of 1% made in December; the OECD said the recent OPEC price increases led to the more pessimistic forecast.

Feb. 22, The prime lending rates in the United States rose for the second time in a week; some banks raised their prime lending rate by half a percentage point to a record 16.25%; others, including the Bank of America, raised their rate by three-quarters of a point to 16.5%; the move was encouraged by the FRB following the increase in the discount rate and news of an acceleration in both consumer and producer prices in January.

Feb. 27, A second round of mortgage rate increases in the month began, as the Bank of Montreal and the Toronto-Dominion Bank raised their five-year mortgage rate to 14.5%, up half a percentage point. Steel companies informed their customers that prices would rise 7% on April 1, comparable to the semi-annual increases in 1979. The Conference Board in Canada estimated a 7% increase in steel prices would boost consumer prices for durable goods by 1%, and by slightly more for capital goods.

Feb. 29, Key interest rates in the Federal Republic of Germany, Switzerland and France rose by 0.5 to 1.5 percentage points in the latest round of worldwide credit-tightening to dampen inflation. Encouraged by the success of the Ontario sales tax rebate, the Ford Motor Co. of Canada Ltd. announced rebates of \$300 and \$500 on passenger car purchases during March. Most major US banks raised their prime rate to a record 16.75%; the prime rate, which had never before exceeded 12% had risen 1.5 percentage points in the previous two weeks.

March 1980

Mar. 5, The US prime rate rose to 17% in the first of a series of hikes this month.

Mar. 7, Citing rising costs of funds, Citibank led an increase in the US prime rate to 17.75%.

Mar. 10, The Bank of Canada announced that it would revert to tying the bank rate to a level one-quarter of a percentage point above the rate set at the weekly auction of 90-day treasury bills; a similar formula had been used from 1956 to 1962.

Mar. 11, The British Columbia budget was introduced; main features included a balanced budget with spending increasing 26% and tax breaks for energy conservation and forestry management.

Mar. 13, In Washington the commerce department reported that United States business spending on plant and equipment was scheduled to rise 1% to 2% in volume in 1980, following a gain of 5% to 6% in 1979.

Mar. 14, The US prime rate rose to 18.25%; home mortgage rates rose to 17%. The Saskatchewan government planned to balance its budget for the first time in four years; the budget called for a surplus of \$1 million above expenditure of about \$2.0 billion; revenues were expected to rise by 11.7% while spending was expected to increase by 8.7% and \$80.4 million was to be transferred out of the Saskatchewan heritage fund; a new corporate capital tax would be applied April 1 to all corporations with capital of more than \$10 million; an increase in taxes on tobacco products was introduced; there were increases in the tax credits for children and senior citizens.

Mar. 18, Following an increase in the bank rate the previous week, all chartered banks in Canada raised their prime rate to 15.75% from 15%; mortgage rates also rose by one-quarter to three-quarters of a point, depending on the term to maturity. Alberta earmarked about \$500 million from the heritage trust fund to finance 10,000 new housing units, Housing Minister Thomas W. Chambers announced; the move was a continuation of provincial stimulus for housing and the economy in general, evident in most provincial spending plans for the year. The Bank of Japan followed the latest increase in the US by raising its discount rate from 7.25% to 9%, and raised reserve requirements to reduce monetary growth. The Japanese government cut public spending and released stockpiles of commodities as part of an anti-inflation program; a US\$5 billion line of credit was arranged with the United States, the Federal Republic of Germany and Switzerland to support the Japanese yen which had fallen 14% against the US dollar in the previous six months. The US prime rate rose to 19%; most analysts felt the prime would pass 20% before peaking.

Mar. 22, Canada Permanent Mortgage Corp. joined the National Trust Co. in ceasing new mortgage loans "until things settle down" but renewals of mortgages would continue; the move by Canada Permanent was in part a result of a forecast by the firm of an outburst of hyper-inflation in the mid-1980s.

Mar. 24, The St. Lawrence Seaway opened for traffic, the earliest opening day in its 21-year history as a result of the mild winter. The National Energy Board approved an application by TransCanada Pipelines Ltd. to begin work immediately on the first leg of an extension of the natural gas pipeline to eastern Quebec and the Maritimes.

Mar. 25, The New Brunswick budget called for no major tax changes and record capital spending, to help support the provincial economy in what was expected to be a difficult year. The Quebec budget included income tax cuts of 3% across the board, effective in July, partial indexing of personal exemptions, indexing of taxes on tobacco and fuel products, and higher corporate income taxes; the changes would result in a \$700 million increase in the provincial deficit.

Mar. 27, Canada's major chartered banks raised their prime lending rates to 16.5% from 15.75%

following a similar increase in the bank rate; mortgage rates rose to 16.75% on five-year terms.

Mar. 31, General Motors of Canada Ltd. raised its wholesale price for cars by 2.8% in Canada and by 2.2% for export to the US.

April 1980

Apr. 2, The Alberta budget called for no new taxes, a 31% increase in capital spending, and a nearly \$1.8 billion surplus; the \$6.4 billion heritage trust fund was projected to grow by another \$2.3 billion in fiscal 1980-81. The Nova Scotia budget was also mildly stimulative: taxes were left essentially unchanged, and major loan and subsidy programs were announced for electricity consumers and the farming, fishing, and mining industries. The US prime lending rate reached 20%.

Apr. 10, After rising sharply for two months, the prime rate was lowered by several US banks from 20% to 19.5%.

Apr. 17, Citing declining demand for loans and lower costs of raising funds, the Chase Manhattan Bank lowered its prime rate to 19.5%. The Canadian prime lending rate fell to 17.25%, the first decline in three years.

Apr. 21, Finance Minister Allan MacEachen, in a statement to the House of Commons, called for a substantial increase in the federal budgetary deficit to \$14.2 billion, as a result of escalating interest rates, pension benefits and subsidies for imported oil; the minister retained the higher taxes on liquor and tobacco and the 5% surcharge on corporate profits introduced by the Conservative government in December.

Apr. 22, The Ontario budget included no new tax increases, but some aid for pensioners and small businesses and major increases in grants to municipalities; the budget forecast 0.3% real growth in Ontario in 1980. Chase Manhattan Bank reduced its prime rate to 19%.

May 1980

May 1, General Motors Corp. offered \$500 rebates on sales of 1979 and 1980 trucks in the United States, the rebates to expire on June 16. Swedish industry slowed to a virtual halt as a general strike and lockouts idled about one million workers in a dispute that revolved around wages, with workers demanding an 11% pay increase and employers offering 2%; this strike which ended May 11 was considerably more important than the day of protest held by trade unions in Britain and France in May.

May 6, Morgan Guaranty Trust Co. of New York lowered its prime rate a full point to 17.5%.

May 9, The Bank of Canada bank rate dropped to 14.17% in response to sharply falling money market yields; chartered banks had cut their prime lending rates to 15.75%. The Toronto-Dominion Bank and Bank of Montreal reduced their primes to 15.5%. Ford Motor Co. offered US customers rebates of \$100 to \$500 on its entire line; in Canada, the

company said it would continue its policy of dealer incentives rather than providing direct rebates.

May 10, Chrysler Corp. was rescued from bankruptcy with \$1.5 billion in US federal loan guarantees, \$200 million in Canadian government loan guarantees, and a \$10 million grant from the Ontario government.

May 12, The US prime lending rate fell to 16.5%; Wall Street analysts predicted the prime would continue to fall as demand for loans dropped further.

May 13, The Manitoba budget projected a small deficit as a result of spending of \$2.02 billion and revenues of \$1.88 billion; the only tax changes included higher cigarette taxes and a gasoline tax based on a fixed percentage of the federal tax.

May 14, The US prime rate fell to 16% as business loan demand plummeted by over \$2.0 billion.

May 15, The federal government announced the natural gas pipeline would be extended from Montreal to Quebec City to reduce oil consumption; the pipeline extension and new refineries in Quebec were projected to cost \$2.7 billion and create 30,500 new jobs.

May 16, The Bank of Canada lowered its bank rate to 13.34% from 14.17%, continuing the pattern of declining rates which began in early April.

May 20, In a provincial referendum, 59.56% of Quebec voters rejected the sovereignty association option of Premier René Lévesque and his Parti Québécois, while 40.44% voted oui. Morgan Guaranty Trust Co., a leader in cutting the prime rate throughout the period of declining rates, cut its prime lending rate to 16% from 16.5%; the prime rate continued to lag well behind the declines in other key rates such as federal funds and treasury bills.

May 22, Following the Quebec referendum vote, treasury bill yields fell over 1.5 percentage points, so the flexible bank rate was lowered to 11.83% from 13.34%. All chartered banks cut their prime rates to 13.75% effective May 26.

May 26, Led by Morgan Guaranty Trust Co., many US banks lowered their prime lending rates to 14%.

May 27, The Mexican government agreed to increase sales of crude oil to Canada to 50,000 barrels a day by December; Canada's net imports amounted to about 150,000 barrels a day.

An exclusively Canadian honours system was introduced in 1967 with the establishment of the Order of Canada. The honours system was enlarged in 1972 with the addition of the Order of Military Merit and three decorations to be awarded in recognition of acts of bravery.

The Order of Canada, instituted on July 1, 1967, the 100th anniversary of Confederation, is designed to honour Canadians for outstanding achievement and service to their country or to humanity at large. Originally, two levels of membership were provided: Companions of the Order and recipients of the Medal of Service. The order was revised in 1972 and now comprises three categories of membership: companions, officers — which includes all those who received the Medal of Service — and members. The last category is intended especially to recognize service in a locality or in a particular field of activity. Not more than 15 persons may be appointed in any one year as companions and the total number of companions is not to exceed 150. Officers of the order may be appointed to the number of 40 persons a year and up to 80 persons may be appointed yearly as members.

All members of the order are entitled to have letters placed after their names as follows: for the companion CC, for the officer OC and for the member CM.

The Queen is sovereign of the order and the Governor General holds office as chancellor and principal companion. Appointments to the order are made, with the Queen's approval, by the Governor General assisted by an advisory council which meets twice a year under the chairmanship of the chief justice of Canada. Members of the advisory council include the clerk of the Privy Council, the under-secretary of state, the chairman of the Canada Council, the president of the Royal Society of Canada, the president of the Association of Universities and Colleges of Canada and not more than two other members who may be appointed by the Governor General from among members of the order.

While Canadians are the primary recipients of the order, the constitution provides that persons who are not Canadian citizens and whom Canada desires to honour may be appointed as honorary members at any of the three levels of membership.

The Order of Military Merit has been established to provide a means of recognizing conspicuous merit and exceptional service by members of the Canadian Armed Forces, both regular and reserve. The order has three levels of membership: commander (CMM), officer (OMM) and member (MMM).

The Queen is the sovereign of the order and the Governor General is the chancellor as well as a commander of the order. The chief of the defence staff is the principal commander of the order. Appointments to the order are made by the Governor General on the recommendation of the minister of national defence; nominations are made by the chief of the defence staff assisted by an advisory committee for the order.

The number of appointments made annually will vary, depending on the number of nominations submitted and approved. The order's constitution stipulates, however, that the total number of appointments made annually will not exceed a tenth of one per cent of the forces' average strength. Members of foreign armed forces who render particularly meritorious service to Canada or the Canadian Armed Forces in the course of their military duties may be made honorary members of the order at any of the three levels.

Canadian bravery decorations. A Medal of Courage was included in the Order of Canada in 1967 but it was found that a single medal would not serve to recognize in an equitable manner acts of bravery which entail varying degrees of risk. Consequently, no awards were made and the medal has now been superseded by a series of three decorations: the Cross of Valour (CV), the Star of Courage (SC) and the Medal of Bravery (MB). Instances of extraordinary heroism in circumstances of extreme peril will be marked with the award of the Cross of Valour; other outstandingly courageous actions may qualify for the award of the Star of Courage or the Medal of Bravery. The bravery decorations are awarded with the approval of the sovereign by the Governor General on the advice of a decorations advisory committee. They may be awarded to civilians, members of the Canadian Armed Forces and of the protective services, and may be awarded posthumously.

Honours and decorations announced in 1978 and 1979 and the dates of appointment of their recipients are as follows.

ORDER OF CANADA

Officer Antoinette Giroux, OC (deceased: July 8, 1978)	Appointed May 24, 1978	Companion The Honourable Wilfred Judson, CC, QC	Appointed July 4, 1978
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Officers

Roland James Baker, OC
 E. Harry Botterell, OC, OBE, MD
 Lionel Daunais, OC
 Paul G. Desmarais, OC
 Alfred Desrochers, OC (deceased: October 12, 1978)
 H. Lovat Dickson, OC
 Phillip Gold, OC, MD
 The Honourable William M. Hamilton, PC, OC
 F. Kenneth Hare, OC
 Lieutenant-Colonel the Honourable Douglas Scott Harkness, PC, OC, GM, ED
 Phyllis G. Haslam, OC
 Ernest Klein, OC
 William Mahoney, OC
 Harold Allin Rogers, OC, OBE
 Fernand Seguin, OC
 Thomas Kunito Shoyama, OC
 Carson Howard Templeton, OC
 The Honourable John Owen Wilson, OC, QC

Members

J. Stewart Alsbury, CM
 Kenneth N. Barnard, CM
 Léonidas Bélanger, CM
 Joseph M. Besso, CM
 Benjamin Beutel, CM
 David Patterson Botsford, CM (deceased: July 16, 1978)
 Stanley E. Brock, CM
 Rachel L. Burgess, CM
 Ellen Burka, CM
 Marjorie Wilkins Campbell, CM
 M. Dorothy Corrigan, CM
 J. Douglas Crashley, CM, CD
 Reverend Father Lionel F. Daigle, CM
 Mark Harold Danzker, CM
 Reverend Father Julien Déziel, CM, o.f.m.
 C. Bruce Fergusson, CM (deceased: September 20, 1978)
 Noreen Flanagan, CM
 Folke Gunnar S. Folkestone, CM
 Jeannette L. Francoeur, CM
 Pierre Eugene Garipey, CM
 Joseph O. Goodman, CM
 Ida Halpern, CM
 Wilfrid Howick, CM
 Archie F. Key, CM
 Seisho Kina Kuwabara, CM
 Gustave Lachance, CM, DDS
 Renaud Lemieux, CM, MD
 Master Warrant Officer Eric McBurnie, CM
 Alexander Mozes, CM
 John Herbert O'Dette, CM
 William Anthony Paddon, CM, MD
 Suzanne Paquette-Goyette, CM
 J. Lyman Potts, CM
 W. Harold Rea, CM
 George Robert Reed, CM
 C. Mervyn Ruggles, CM
 Tsutae Sato, CM
 Carl Fellman Schaefer, CM, CD

E. Marion Sherman, CM
 William M. Sinclair, CM
 Richard B. Wilson, CM

Appointed December 18, 1978

Companions

The Honourable Gérard Pelletier, PC, CC
 The Most Reverend Edward W. Scott, CC, DD

Officers

Derek R.C. Bedson, OC
 Hans Blumenfeld, OC
 Douglas G. Cameron, OC, MC, MDCM
 Norman K. Campbell, OC
 Côme Carbonneau, OC
 Alfred J. Casson, OC
 Norman R. Chappell, OC
 Jean Coulthard, OC
 Robert Després, OC
 Barker Fairley, OC
 R. Gordon L. Fairweather, OC, QC
 André Gagnon, OC
 Andrée Maillet, OC
 Donald McInnes, OC, QC
 Peter Charles Newman, OC
 Fernand Ouellet, OC
 The Honourable Walter S. Owen, OC, QC
 Rabbi W. Gunther Plaut, OC
 Donald McNichol Sutherland, OC
 Pierre Tisseyre, OC
 Maurice Lewis Van Vliet, OC

Members

Monroe Abbey, CM, QC
 Chief David Ahenakew, CM, CD
 I.W. Akerley, CM
 Camille Archambault, CM
 Lieutenant-Colonel John Avison, CM, CD
 Kévork Baghdjian, CM
 Phyllis R. Blakeley, CM
 Jeannette F. Bock, CM
 Elizabeth Ruth Bridgman, CM, MD
 Leo Chevalier, CM
 Joseph H. Cohen, CM
 Gordon G. Currie, CM
 J.-Raymond Denault, CM
 Commander C. Garfield Dixon, CM, CD
 Jack M. Dow, CM
 Charles Henry Foss, CM
 Denise Gaudet, CM
 Gertrude Constant Gendreau, CM (deceased: February 14, 1979)
 Conrad Godin, CM, DDS
 Heinrich Ihmels Grube, CM, MM
 Hans Albert Hochbaum, CM
 Arthur T. Jenkins, CM
 John J.T. Johnstone, CM
 Helen Kalvak, CM
 Diane Jones Konihowski, CM
 Preston MacIntyre, CM, MD
 Kenric R. Marshall, CM
 Jeanne Minhinnick, CM
 Colin John G. Molson, CM
 Norval Morriseau, CM

The Reverend Joseph Stanley Murphy, CM
 Jane B.D. Murray, CM
 Lieutenant-Colonel J.E.V. Murrell, CM, ED, CD
 François Pichard, CM
 Edith May Radley, CM
 Harry D. Roberts, CM, MD
 Donald McQ. Shaver, CM
 Donald Graham Smith, CM
 Norman McGregor Stewart, CM
 The Venerable Archdeacon Cecil Swanson, CM
 Takaichi Umezuki, CM

ORDER OF MILITARY MERIT

Appointed June 19, 1978

Commanders

Lieutenant-General Kenneth Edward Lewis, CMM, CD
 Lieutenant-General Jean Jacques Paradis, CMM, CD
 Lieutenant-General James Charles Smith, CMM, CD

Officers

Major Julien Jacques Bailliu, OMM, CD
 Major Keith MacKenzie Cameron, OMM, CD
 Commander Beverly Francis Carson, OMM, CD
 Major Clifford Alexander Churchill, OMM, CD
 Major John Baudains Cottle, OMM, CD
 Colonel Jean Marc Fournier, OMM, CD
 Lieutenant-Colonel John Loughton Frazer, OMM, CD
 Commander Thomas Leigh Bourdillon Hebbert, OMM, CD
 Lieutenant-Colonel William David Johnston, OMM, CD
 Major William Austin Jones, OMM, CD
 Lieutenant-Colonel Charles André Lambert, OMM, CD
 Colonel Reginald George Litt, OMM, CD
 Lieutenant-Colonel Ian Farquhar MacDonald, OMM, CD
 Major Lemuel Wilbert Edgar Murphy, OMM, CD
 Captain (N) Richard Dezso Okros, OMM, CD
 Commander Mark Hubert Digby Taylor, OMM, CD
 Major John Charles Thompson, OMM, CD
 Colonel James Hendricks Turnbull, OMM, CD
 Colonel John Arthur Williams, OMM, CD
 Major Leonard Thomas Zbitnew, OMM, CD

Members

Captain Ray Rance Britton, MMM, CD
 Master Warrant Officer Albert Oscar Cadieux, MMM, CD
 Captain Jean-Paul Carrier, MMM, CD
 Captain Ronald Gordon Chester, MMM, CD
 Captain Bernard Emmett Donnelly, MMM, CD
 Chief Warrant Officer Hector Aldéric Forget, MMM, CD
 Chief Warrant Officer Joseph Gaston Gagné, MMM, CD
 Warrant Officer Maurice Michel Gauthier, MMM, CD

Chief Warrant Officer Laurier James George, MMM, CD
 Captain Louis Gerald Hansen, MMM, CD
 Master Warrant Officer Herman Nicholas Jackson, MMM, CD
 Master Corporal Charles Warren Kerr, MMM, CD
 Chief Warrant Officer Arthur Beverley Kilburn, MMM, CD
 Chief Warrant Officer Frank John Laturnus, MMM, CD
 Master Warrant Officer Robert Tassian LeBlanc, MMM, CD
 Warrant Officer Joseph Gérard Rodolph Levesque, MMM, CD
 Chief Warrant Officer Alexander Fraser MacDougal, MMM, CD
 Master Warrant Officer Joseph Claude Maurice Masson, MMM, CD
 Chief Warrant Officer William Patrick Melanson, MMM, CD
 Chief Petty Officer Second Class John Stanley Osborne, MMM, CD
 Sergeant John Stovere Petroff, MMM, CD
 Master Warrant Officer Jean-Claude Pineault, MMM, CD
 Master Warrant Officer John Alfred Powell, MMM, CD
 Captain Nicholas Warren Puddicombe, MMM, CD
 Master Warrant Officer Juy Kong (Gorden) Quan, MMM, CD
 Chief Warrant Officer Robert Donald Smith, MMM, CD
 Lieutenant-Commander Edward Patrick Stack, MMM, CD
 Sergeant Wayne Matthew Weber, MMM, CD
 Master Warrant Officer Leslie Alfred White, MMM, CD
 Master Warrant Officer Chester Floyd Williams, MMM, CD
 Chief Warrant Officer Lorne Eric Williams, MMM, CD

Appointed December 11, 1978

Commanders

Major-General Charles Henri Belzile, CMM, CD
 Major-General Wilson George Leach, CMM, CD
 Major-General Richard Rohmer, CMM, DFC, CD

Officers

Lieutenant-Commander Jean Guy Roger Boucher, OMM, CD
 Colonel David Fairlie Candlish Garland, OMM, CD
 Major Jean Louis Charles Garneau, OMM, CD
 Lieutenant-Colonel Walter William Garner, OMM, CD
 Lieutenant-Colonel Dorothy Jean Gogan, OMM, CD
 Major John Frederick Hunt, OMM, CD
 Lieutenant-Commander John Charles Jessop, OMM, CD

Colonel Georges Letourneau, OMM, CD
 Lieutenant-Colonel William Donald Macnamara,
 OMM, CD
 Colonel William John Patterson, OMM, CD
 Chief Warrant Officer Robert Joseph Slaney,
 OMM "elevated", CD
 Colonel William Beatty Sterne, OMM, CD
 Major Douglas Bagshaw Walton, OMM, CD
 Lieutenant-Colonel Donald Ray Williams,
 OMM, CD
 Captain (N) William Wilson, OMM, CD

Members

Master Warrant Officer Gordon Edward Francis
 Arnold, MMM, CD
 Master Warrant Officer Jean Ronald Arseneault,
 MMM, CD
 Master Warrant Officer Guy Blumlein, MMM,
 CD
 Chief Warrant Officer Donald Stanley Brown,
 MMM, CD
 Chief Petty Officer First Class Robert Burnett
 Chalmers, MMM, CD
 Corporal Normand Cheyney, MMM, CD
 Chief Warrant Officer Jean Paul Coté, MMM,
 CD
 Warrant Officer André Joseph Rosaire Curodeau,
 MMM, CD
 Chief Petty Officer First Class Dorothy Deason,
 MMM, CD
 Warrant Officer James Herman Donovan,
 MMM, CD
 Chief Warrant Officer Charles William
 Estabrooks, MMM, CD
 Captain Frederick James Forsyth, MMM, CD
 Chief Warrant Officer Robert Gary George,
 MMM, MB, CD
 Captain Joseph Robson Hardy, MMM, CD
 Chief Warrant Officer Robert William Harris,
 MMM, CD
 Warrant Officer Joseph Roland Réjean Lamothe,
 MMM, CD
 Warrant Officer John Fredrick Rene Lanfrancini,
 MMM, CD
 Master Warrant Officer Malcolm Allison Lantz,
 MMM, CD
 Warrant Officer James Daniel MacDougall,
 MMM, CD
 Master Warrant Officer John David Marr,
 MMM, CD
 Captain Jean Charles Morneau, MMM, CD
 Captain Randolph Kerry Morriss, MMM
 Chief Warrant Officer David Roderick O'Neil,
 MMM, CD
 Chief Warrant Officer Roberto Pietro Angelo
 Paride Osside, MMM, CD
 Chief Warrant Officer Joseph Charles Roger
 Powers, MMM, CD
 Master Corporal Edison Gordon Priest, MMM,
 CD
 Chief Warrant Officer Kenneth Robert Sanford,
 MMM, CD
 Chief Warrant Officer Clifford James Scott,
 MMM, CD

Sergeant Joyaleen Eva Maria Slade, MMM, CD
 Master Warrant Officer Jacques Albert Soucy,
 MMM, CD
 Sergeant Daniele Stefano, MMM, CD
 Captain Donald Clyde Taylor, MMM, CD
 Master Warrant Officer Gerald Wayne Topping,
 MMM, CD

BRAVERY DECORATIONS

Appointed May 19, 1978

Star of Courage

David Charles Christney, SC
 Terrance Allan Collins, SC
 Randy Sherman Davey, SC
 Andreas Kariolou, SC (posthumous)
 Robert Keith Knorr, SC (posthumous)
 David Yablonski, SC (posthumous)

Medal of Bravery

Robert Murray Amos, MB
 Clifford Charles, MB
 Martin Charles, MB
 Steven Lorne Folk, MB
 Robert Barry Hynes, MB
 Todd Cameron Yager MacKay, MB
 Godfrey Kenneth Savage, MB
 Richard Lawrence Ulliach, MB

Appointed September 11, 1978

Cross of Valour

Thomas Hynes, CV (posthumous)

Star of Courage

Louis E. Craig, SC
 William A. Dixon, SC
 Gernot Kurt Fischer, SC
 Kenneth M. Kantymir, SC
 Constable Robert S. Krewenchuk, SC
 Michel Laplante, SC (posthumous)
 Johnny Nakoolak, SC
 Antonius W. Van Eindhoven, SC

Medal of Bravery

Daniel J. Bily, MB
 Master Corporal Roderick J. Campbell, MB,
 MMM, CD
 Kevin C. Fox, MB
 Master Corporal Joseph E.G. Gaudreault, MB
 Robert C. Gordon, MB
 John Groeb, MB
 Robert Harron, MB
 Corporal Jean C. Lemay, MB (deceased: July
 1978)
 Albert W. Mertin, MB
 The Reverend Neale C. Thompson, MB

Appointed December 22, 1978

Star of Courage

Denny William George Andrews, SC

Medal of Bravery

Paul Bourgoin, MB
 Basil Joseph Burns, MB
 André Laberge, MB

Rodolphe Laberge, MB
Yves Laberge, MB
Captain the Reverend William Roderick
MacLennan, MB
Corrado Sartore, MB
Warrant Officer Edgar J. Weatherbee, MB, CD

ORDER OF CANADA

Appointed June 16, 1979

Member

Monsignor Victor Tremblay, p.d.'h., CM
(deceased: June 17, 1979)

Appointed June 25, 1979

Companions

Paul Gérin-Lajoie, CC
The Most Reverend Father Georges-Henri
Levesque, o.p., CC
John Charles Polanyi, CC
The Honourable Wishart Flett Spence, CC, OBE

Officers

Frank Augustyn, OC
His Excellency, The Most Reverend Monsignor
Maurice Baudoux, OC
Louis-Philippe Bonneau, OC
Sylvain Cloutier, OC
Vianney Décarie, OC
Jacques G. de Tonnancour, OC
Harry Emmet Gunning, OC
Francess G. Halpenny, OC
Gordon F. Hughes, OC
Tom Kent, OC
Ernest Lindner, OC
Patrick D. McTaggart-Cowan, OC, MBE
Monique Mercure, OC
Joseph Morris, OC
Robert G. Orr, OC
Gérard Plourde, OC
Murray G. Ross, OC
Gordon Sinclair, OC
Ian D. Sinclair, OC

Members

André M. Bachand, CM
Aba Bayefsky, CM
Pierre Béique, CM
Alfred M. Bell, CM
Dama Bell, CM
Jean-Yves Bérubé, CM
Alexander Brott, CM
The Reverend Charles R. Catto, CM
Camille Corriveau, CM
Catherine Kraus Crouse, CM
Jack Diamond, CM
Art Dixon, CM
Louise Drouin-Savard, CM
Aimé Gagné, CM
Christian Graefe, CM
Claire Margaret Haddad, CM
Henry Peter Hildebrand, CM, DD
John A. Hildes, CM MD
Harold Horwood, CM
Shiu Loon Kong, CM

Joachim Guillaume "Willie" Lamothe, CM
Elizabeth Ann Lane, CM
Helen M. Law, CM
Clara Yee Lim, CM, RN
George Arnold McArthur, CM
Margaret L. McLeod, CM
Charles Stuart Mitchell, CM
Garfield McLeod Moffatt, CM, MD
Murray A. Newman, CM
Superintendent Bruce Lionel Northorp, CM
Will Ogilvie, CM, MBE
Roman J. Ostashevsky, CM
Edith B. Pinet, CM, RN
Staff Sergeant Gilles Poissant, CM
Frederick W. Russell, CM
Hugh Sinclair, CM
The Reverend Michael J. Smith, o.m.i., CM
Paul J. Tuz, CM, CD

Appointed December 17, 1979

Companions

Lotta Hitschmanova, CC
Sir William Samuel Stephenson, Kt, CC, MC,
DFC

Officers

The Reverend Father Richard Arès, s.j., OC
R. Gordon Bell, OC, MD
Carrie Best, OC, CM
Roger Charbonneau, OC
Robert De Coster, OC
The Honourable Ellen Louks Fairclough, PC, OC
Gilbert Finn, OC, CM
Barbara Frum, OC
Serge Garant, OC
Reva Gerstein, OC, CM
His Excellency Monsignor Paul Grégoire, OC
Colonel the Honourable Hugues Lapointe, PC,
OC, CD, QC
John Vernor Mills, OC, QC
Gordon Edward Pinsent, OC
Harold A. Renouf, OC
Robert W. Stewart, OC
Jacques Viau, OC, QC
Ronald L. Watts, OC
Percy Williams, OC

Members

Charles F.W. Burns, CM
Her Worship M. Isabelle Butters, CM
H. Reuben Cohen, CM, QC
The Reverend Father J. Harold Conway, o.m.i.,
CM
Margaret M. Costantini, CM
Albert M. Craig, CM
Arthur W. Delamont, CM
Denys Dion, CM
Joseph-Marie Antoine Dubuc, CM
Flore Durocher-Jutras, CM
Cecil Fielding, CM
James H. Grahame, CM, MD
John Green, CM, QC
Evelyn Margery Hinds, CM
Mary Eileen Hogg, CM

Ferguson Jenkins, CM
 Marjorie A. Johnston, CM
 Leslie Laking, CM
 Roland Leduc, CM
 Peter L.P. Macdonnell, CM, QC
 Mary Elizabeth Macdonald, CM
 Roger Motut, CM
 Cynthia Maria Nicholas, CM
 Jean-Louis Ernest Pallascio-Morin, CM
 Philippe Pariseault, CM
 F. Thomas Parker, CM
 Annie Powers, CM, MD
 Brother Emmanuel Quintal, CM
 Sheila Rose, CM
 Elizabeth Rummel, CM
 Belle Shenkman, CM
 Ascher I. Smith, CM
 Joseph C. Stangl, CM
 Ethel Stark, CM
 George Swinton, CM
 Suzanne Viau, CM
 Monsignor Maurice Vincent, p.d., CM
 Modesto C. Zadra, CM, MD
 Nicolas M. Zsolnay, CM

Appointed December 31, 1979

Member

Chief Robert Smallboy, CM

ORDER OF MILITARY MERIT

Appointed June 18, 1979

Commanders

Vice-Admiral John Allan, CMM, CD
 Lieutenant-General George Allan MacKenzie, CMM, CD
 Lieutenant-General Gérard Charles Edouard Thériault, CMM, CD

Officers

Major Roger Vincent Carrière, OMM, CD
 Major Trefflé Champagne, OMM, CD
 Major John Richard Chandler, OMM, CD
 Lieutenant-Colonel David Lawrence John Crabb, OMM, CD
 Captain (N) Frederick William Crickard, OMM, CD
 Lieutenant-Colonel Peter David Giles, OMM, CD
 Major William Edward Griesbach, OMM, CD
 Commander Albert Ralph Horner, OMM, CD
 Major Donald James Johnston, OMM, CD
 Lieutenant-Colonel Charles Robert Jean Lafleur, OMM, CD
 Lieutenant-Colonel Gary Bareham McCowan, OMM, CD
 Colonel Claude Howard Murphy, OMM, CD
 Colonel Donald Frederick Pruner, OMM, CD
 Colonel Simon Bernard Roach, OMM, CD
 Lieutenant-Colonel Keith Blair Scott, OMM, CD

Members

Sergeant Norman Francis Ross Adams, MMM, CD
 Master Warrant Officer Edward Harrison Bassingthwaite, MMM, CD

Captain Bruno Bergeron, MMM, CD
 Sergeant Joseph Octave Vincent Bouchard, MMM, CD
 Master Warrant Officer Joseph Marcel Conrad Brochu, MMM, CD
 Chief Warrant Officer Thomas Herbert Campbell, MMM, CD
 Sergeant Frederick Henry Carroll, MMM, CD
 Master Warrant Officer Richard Wayne Deslauniers, MMM, CD
 Chief Warrant Officer Roland Elroy Dobson, MMM, CD
 Warrant Officer Joseph Jean Pierre Girard Doyle, MMM, CD
 Master Warrant Officer Jacques Dugas, MMM, CD
 Sergeant Harriet Anne O'Neill Edmond, MMM, CD
 Sergeant Logan Campbell Fergusson, MMM, CD
 Captain Donald John Henry Fish, MMM, CD
 Warrant Officer Bernard James Fitzgerald, MMM, CD
 Chief Warrant Officer Albert Joseph Godin, MMM, CD
 Warrant Officer Douglas Allison Guttin, MMM, CD
 Chief Petty Officer First Class Cyril Frank Hranka, MMM, CD
 Chief Warrant Officer John Bernard Hynes, MMM, CD
 Master Warrant Officer Frank Joseph Long, MMM, CD
 Sergeant Beverley Betty Ann Makinen, MMM, CD
 Chief Warrant Officer Charles Gladstone Meade, MMM, CD
 Petty Officer Second Class Joseph Philip Gerald Ouellet, MMM, CD
 Master Warrant Officer Thomas Albert Payette, MMM, CD
 Captain Michael John Ricketts, MMM, CD
 Captain Boyd Henry Ring, MMM, CD
 Captain Norman Newton Sinclair, MMM, CD
 Chief Warrant Officer John Gavin Smith, MMM, CD
 Master Warrant Officer Joseph John Peter Soucy, MMM, CD
 Chief Warrant Officer Frederick Ernest Stenning, MMM, CD
 Captain John William Stewart, MMM, CD
 Warrant Officer Carl Douglas VanDine, MMM, CD
 Chief Warrant Officer John Stanley Yablonski, MMM, CD

Appointed December 10, 1979

Commanders

Brigadier-General Bendt Alexander O'Neil Oxholm, CMM, CD
 Brigadier-General Alan Pickering, CMM, CD
 Brigadier-General Mortimer Lyon Aaron Weisman, CMM, CD

Officers

Lieutenant-Colonel David Joseph Bonner,
OMM, CD
Colonel Joseph Gérard Jean-Guy Boulet, OMM,
CD
Lieutenant-Colonel Roger Bourdon, OMM, CD
Colonel Harold William Brogan, OMM, CD
Lieutenant-Commander John Manning Chute,
OMM, CD
Lieutenant-Commander Peter John Drage,
OMM, CD
Major Kenneth Stanley Durrant, OMM, CD
Colonel John James Grant, OMM, CD
Lieutenant-Colonel Colin Hodgson, OMM, CD
Colonel Alexander Kyte Kennedy, OMM, CD
Colonel Donald James Langdon, OMM, CD
Major Joseph Jean-Marie Sauvageau, OMM, CD
Colonel George Dunbar Simpson, OMM, CD
Lieutenant-Commander John Burton Simpson,
OMM, CD
Lieutenant-Colonel Hubert Carradice Taylor,
OMM, CD
Lieutenant-Colonel John Lewis Twambley,
OMM, CD

Members

Captain Ronald Aquino, MMM, CD
Chief Warrant Officer Richard Aubuchon,
MMM, CD
Master Warrant Officer James Reginald Baker,
MMM, CD
Master Warrant Officer Raymond Bissonnette,
MMM, CD
Chief Warrant Officer Ronald Clifford Broderick,
MMM, CD
Warrant Officer Roland Joseph Courtemanche,
MMM, CD
Captain Joseph Adrien Desbiens, MMM, CD
Master Warrant Officer Lawrence Wilfred
Duncan, MMM, CD
Chief Petty Officer Second Class Stanley Gordon
Felker, MMM, CD
Chief Warrant Officer Joseph Bernard Fullum,
MMM, CD
Master Corporal Christopher Matheson Gay,
MMM, CD
Master Warrant Officer Kenneth Everett Greer,
MMM, CD
Chief Warrant Officer Leonard Willoby
Grummett, MMM, CD
Chief Warrant Officer James Albert Heyman,
MMM, CD
Master Corporal Joseph Jacques Maurice Huard,
MMM, CD
Master Corporal Robert Anthony Hubert,
MMM, CD
Chief Warrant Officer Gordon Johnson, MMM,
CD
Warrant Officer Bert Keryluk, MMM, CD
Chief Warrant Officer Alonzo Earl Luker,
MMM, CD
Lieutenant (N) John Maywood McBain, MMM,
CD
Sergeant Robert Bruce McKay, MMM, CD

Warrant Officer Joseph Guay Munro, MMM,
CD
Captain Margaret Ann Nelson, MMM, CD
Chief Warrant Officer Joseph James Arthur
Pelletier, MMM, CD
Master Warrant Officer Ronald Wilfred
Pomeroy, MMM, CD
Master Warrant Officer John Austin Michael
Reid, MMM, CD
Captain Karl Lorenz Rudhart, MMM, CD
Warrant Officer Frank Edward Rymarchuk,
MMM, CD
Master Warrant Officer Henry Charles Sampson,
MMM, CD
Master Warrant Officer Leonard Brian Seward,
MMM, CD
Captain Robert George Taylor, MMM, CD
Captain Kenneth Byron White, MMM, CD
Chief Warrant Officer Donald Glenwood Zinck,
MMM, CD

BRAVERY DECORATIONS**Appointed April 2, 1979****Cross of Valour**

Joseph François Emeric Gaston Langelier, CV

Star of Courage

Acting Corporal John Archer, SC
Marc Andrew Drouin, SC
Paul Guy Fournier, SC (posthumous)
Joseph Helfrick, SC (posthumous)
Edward Leier, SC (posthumous)
Sergeant Denis Lush, SC
Sandra Joan MacDonald, SC (posthumous)
Dawn Kathleen May, SC

Medal of Bravery

Gail Lois Bunn, MB
Valentine Campbell, MB
Rita Gagnon, MB
Lieutenant Marcel Mailloux, MB and Bar
Corporal Georges Rouleau, MB
Gordon Douglas Stevenson, MB
David James White, MB

Appointed July 2, 1979**Star of Courage**

John Douglas Cooper, SC
Walter Gordon Langdon-Davies, SC
(posthumous)
Barbara McCann, SC (posthumous)

Medal of Bravery

David Bradt, MB
Delmer Colin Courtoreille, MB
Stephen John Dainard, MB
Francine Desbiens, MB
Germain Hainault, MB
Albert Martinet, MB
John Blake Mitchell, MB
Donald Benson Sowerby, MB
Clovis Saint-Jacques, MB
Denis Victor Tesselaar, MB
Patrick William Tesselaar, MB
Thomas Tierney, MB

Paul John Andrew Worsfold, MB

Appointed November 5, 1979

Star of Courage

Maurice Berthiaume, SC (posthumous)

Edward Lawrence Brumm, SC

Deborah Jean MacLean, SC

Deborah Ann McInnis, SC

John Edward Taylor, SC

James Lionel Walsh, SC

Kenneth Leonard Wegner, SC

Medal of Bravery

Andrew Lloyd Burke, MB

David James Calderwood, MB

Ronald Richard Calderwood, MB

William Charles Douglas Forbes, MB

Jean Jeanneret, MB

Daniel Larrivée, MB

Denis Paiement, MB

Thomas Royston, MB

Wayne Nelson Wellman, MB

Steven Richard Williams, MB

Diplomatic and consular representation

Appendix 5

Canada maintains diplomatic, consular or trade representation with the following countries and organizations. This list, giving the status of representatives and their mailing addresses, was updated to April 1980 by Domestic Information Programs Division, Department of External Affairs.

Canadian representatives abroad

Afghanistan

Ambassador: c/o Canadian Embassy, GPO Box 1042, Islamabad, Pakistan.

Algeria

Ambassador: PO Box 225, Gare Alger.

Argentina

Ambassador: Casilla de Correo 1598, Buenos Aires.

Australia

High Commissioner: Commonwealth Ave., Canberra, ACT, 2600.

Austria

Ambassador: Luegerring 10, A-1010 Vienna.

Bahamas

High Commissioner: c/o Canadian High Commission, PO Box 1500, Kingston 10, Jamaica.

Bahrain

Ambassador: c/o Canadian Embassy, PO Box 25281 Safat, Kuwait City, Kuwait.

Bangladesh

High Commissioner: GPO Box 569, Dacca.

Barbados

High Commissioner: PO Box 404, Bridgetown.

Belgium

Ambassador: rue de Loxum 6, 1000 Brussels.

Belize

Commissioner: c/o Canadian High Commission, PO Box 1500, Kingston 10, Jamaica.

Benin, People's Republic of

Ambassador: c/o Canadian High Commission, PO Box 1639, Accra, Ghana.

Bermuda

Commissioner: c/o Canadian Consulate General, 1251 Ave. of the Americas, New York, NY, 10020, USA.

Bolivia

Ambassador: c/o Canadian Embassy, Casilla 1212, Lima, Peru.

Botswana

High Commissioner: c/o Canadian Embassy, PO Box 26006, Arcadia, Pretoria 0007, South Africa.

Brazil

Ambassador: Caixa Postal 07-0961, 70000, Brasilia DF.

Britain

High Commissioner: Canada House, Trafalgar Square, Cockspur St., SW, 1Y 5BJ London.

Bulgaria

Ambassador: c/o Canadian Embassy, Proleterskih Brigada 69, 11000 Belgrade, Yugoslavia.

Burma

Ambassador: c/o Canadian Embassy, GPO Box 569, Dacca, Bangladesh.

Burundi

Ambassador: c/o Canadian Embassy, PO Box 8341, Kinshasa, Republic of Zaire.

Cameroon

Ambassador: PO Box 572, Yaoundé.

Cape Verde Islands

Ambassador: c/o Canadian Embassy, PO Box 3373, Dakar, Senegal.

Central African Empire

Ambassador: c/o Canadian Embassy, PO Box 572, Yaoundé, Cameroon.

Chad

Ambassador: c/o Canadian Embassy, PO Box 572, Yaoundé, Cameroon.

Chile

Ambassador: Casilla 427, Santiago.

China, People's Republic of

Ambassador: 10 San Li Tun Road, Chao Yang District, Peking.

Colombia

Ambassador: Apartado Aéreo 53531, Bogota 2.

Comores (Islands)

Ambassador: c/o Canadian High Commission, PO Box 1022, Dar-es-Salaam, United Republic of Tanzania.

Congo, People's Republic of the

Ambassador: c/o Canadian Embassy, PO Box 8341, Kinshasa, Republic of Zaire.

Costa Rica

Ambassador: Apartado Postal 10303, San José.

Cuba

Ambassador: c/o PO Box 499 (HVA), Ottawa,
K1N 8T7.

Cyprus

High Commissioner: c/o Canadian Embassy, PO
Box 6410, Tel Aviv, Israel.

Czechoslovakia

Ambassador: Mickiewiczova 6, Prague 6.

Denmark

Ambassador: Prinsesse Maries Allé 2, 1908
Copenhagen V.

Djibouti

Ambassador: c/o Canadian Embassy, PO Box
1130, Addis Ababa, Ethiopia.

Dominica

High Commissioner: c/o Canadian High
Commission, PO Box 404, Bridgetown,
Barbados.

Dominican Republic

Ambassador: c/o Canadian Embassy, Apartado del
Este No. 62302, Caracas, Venezuela.

Ecuador

Ambassador: c/o Canadian Embassy, (airmail)
Apartado Aéreo 53531, Bogota 2, Colombia.

Egypt, Arab Republic of

Ambassador: Kasr el Doubara Post Office, Cairo.

El Salvador

Ambassador: c/o Canadian Embassy, Apartado
Postal 10303, San José, Costa Rica.

Ethiopia

Ambassador: PO Box 1130, Addis Ababa.

European Communities

The European Economic Community
The European Atomic Energy Community
The European Coal and Steel Community
Head of Mission: The Mission of Canada to the
European Communities, 5th floor, rue de
Loxum 6, 1000 Brussels, Belgium.

Fiji

High Commissioner: c/o Canadian High
Commission, PO Box 12-049, Wellington
North, New Zealand.

Finland

Ambassador: PO Box 779, 00101 Helsinki 10.

France

Ambassador: 35, avenue Montaigne, 75008 Paris
VIII^e.

Gabon

Chargé d'Affaires a.i. and Consul: PO Box 4037,
Libreville.

Gambia

High Commissioner: c/o Canadian Embassy, PO
Box 3373, Dakar, Senegal.

Germany, Democratic Republic of

Ambassador: c/o Canadian Embassy, Ulica Matejki
1/5, Warsaw 00-481, Poland.

Germany, Federal Republic of

Ambassador: Friedrich-Wilhelm-Strasse 18, 53
Bonn.

Ghana

High Commissioner: PO Box 1639, Accra.

Greece

Ambassador: 4 Ioannou Ghennadiou St., Athens
140.

Grenada

High Commissioner: c/o Canadian High
Commission, PO Box 404, Bridgetown,
Barbados.

Guatemala

Chargé d'Affaires a.i. and Consul: PO Box 400,
Guatemala, GA.

Guinea

Ambassador: c/o Canadian Embassy, PO Box
3373, Dakar, Senegal.

Guinea-Bissau

Ambassador: c/o Canadian Embassy, PO Box
3373, Dakar, Senegal.

Guyana

High Commissioner: PO Box 660, Georgetown.

Haiti

Ambassador: CP 826, Port-au-Prince.

Holy See

Ambassador: Via della Conciliazione 4/D, 00193
Rome, Italy.

Honduras

Ambassador: c/o Canadian Embassy, Apartado
Postal 10303, San José, Costa Rica.

Hong Kong

Commissioner: PO Box 20264, Hennessy Road
Post Office.

Hungary

Ambassador: Budakeszi, Ut 55/D P/8, H-1021
Budapest.

Iceland

Ambassador: c/o Canadian Embassy, Postuttak,
Oslo 1, Norway.

India

High Commissioner: PO Box 5207, New Delhi.

Indonesia

Ambassador: PO Box 52/JKT, Jakarta.

Iran

Ambassador: c/o Canadian Embassy, PO Box
1610, Tehran.

Iraq

Ambassador: c/o Canadian Embassy, PO Box 323,
Central Post Office, Baghdad.

Ireland

Ambassador: 65 St. Stephens Green, Dublin 2.

Israel

Ambassador: PO Box 6410, Tel Aviv.

Italy

Ambassador: Via GB de Rossi 27, 00161 Rome.

Ivory Coast

Ambassador: 01 CP 4104, Abidjan 01.

Jamaica

High Commissioner: PO Box 1500, Kingston 10.

Japan

Ambassador: 3-38 Akasaka 7-chome, Minato-ku, Tokyo 107.

Jordan

Ambassador: c/o Canadian Embassy, CP 2300, Beirut, Lebanon.

Kenya

High Commissioner: PO Box 30481, Nairobi.

Kiribati, Republic of

High Commissioner: c/o Canadian High Commission, PO Box 12-049, Wellington North, New Zealand.

Korea

Ambassador: PO Box 6299, Seoul 100.

Kuwait

Ambassador: PO Box 25281 Safat, Kuwait City.

Laos

Ambassador: c/o Canadian Embassy, PO Box 2090, Bangkok, Thailand.

Lebanon

Ambassador: CP 2300, Beirut.

Lesotho

High Commissioner: c/o Canadian Embassy, PO Box 26006, Arcadia, Pretoria 0007, South Africa.

Liberia

Ambassador: c/o Canadian High Commission, PO Box 1639, Accra, Ghana.

Libyan Arab Republic

Ambassador: c/o Canadian Embassy, Kasr el Doubara Post Office, Cairo, Arab Republic of Egypt.

Luxembourg

Ambassador: c/o Canadian Embassy, rue de Loxum 6, 1000 Brussels, Belgium.

Macao

Consul: c/o Commission for Canada, PO Box 20264, Hennessy Road Post Office, Hong Kong.

Madagascar, Democratic Republic of

Ambassador: c/o Canadian High Commission, PO Box 1022, Dar-es-Salaam, United Republic of Tanzania.

Malawi

High Commissioner: c/o Canadian High Commission, PO Box 1313, Lusaka, Zambia.

Malaysia

High Commissioner: PO Box 990, Kuala Lumpur.

Mali

Ambassador: c/o Canadian Embassy, 01 PO Box 4104, Abidjan 01, Ivory Coast.

Malta

High Commissioner: c/o Canadian Embassy, Via GB de Rossi 27, 00161 Rome, Italy.

Mauritania

Ambassador: c/o Canadian Embassy, PO Box 3373, Dakar, Senegal.

Mauritius

High Commissioner: c/o Canadian High Commission, PO Box 1022, Dar-es-Salaam, United Republic of Tanzania.

Mexico

Ambassador: Melchor Ocampo 463-7, Mexico 5, DF.

Monaco

Consul General: c/o Canadian Consulate General, 24, avenue du Prado, 13006 Marseille, France.

Mongolia

Ambassador: c/o Canadian Embassy, 23 Starokonyushenny Pereulok, Moscow, USSR.

Morocco

Ambassador: CP 709, Rabat-Agdal, Maroc.

Mozambique

Ambassador: c/o Canadian High Commission, PO Box 1313, Lusaka, Zambia.

Mutual and Balanced Force Reduction Talks

Head of Delegation, Ambassador: The Canadian Delegation to the Mutual and Balanced Force Reduction Talks, Luegerring 10, A-1010 Vienna, Austria.

Nepal

Ambassador: c/o Canadian High Commission, PO Box 5207, New Delhi, India.

Netherlands

Ambassador: Sophialaan 7, The Hague.

New Zealand

High Commissioner: PO Box 12-049, Wellington North.

Nicaragua

Ambassador: c/o Canadian Embassy, Apartado Postal 10303, San José, Costa Rica.

Niger

Ambassador: c/o Canadian Embassy, 01 PO Box 4104, Abidjan 01, Ivory Coast.

Nigeria

High Commissioner: PO Box 851, Lagos.

North Atlantic Council

Permanent Representative and Ambassador: Léopold III Blvd., 1110 Brussels, Belgium.

Norway

Ambassador: Posttuttak, Oslo 1.

Oman

Ambassador: c/o Canadian Embassy, PO Box 1610, Tehran, Iran.

Organization of American States

Ambassador and Permanent Observer: 2450 Massachusetts Ave. NW, Washington, DC, 20008, USA.

Organization for Economic Co-operation and Development

Ambassador and Permanent Representative: 19, rue de Franqueville, 75016 Paris, France.

Pakistan

Ambassador: GPO Box 1042, Islamabad.

Panama

Ambassador: c/o Canadian Embassy, Apartado Postal 10303, San José, Costa Rica.

Papua New Guinea

High Commissioner: c/o Canadian High Commission, Commonwealth Ave., Canberra, ACT, 2600 Australia.

Paraguay

Ambassador: c/o Canadian Embassy, Casilla de Correo 1598, Buenos Aires, Argentina.

Peru

Ambassador: Casilla 1212, Lima.

Philippines

Ambassador: PO Box 971, Commercial Centre, Makati, Rizal, Manila.

Poland

Ambassador: Ulica Matejki 1/5, Warsaw 00-481.

Portugal

Ambassador: Rua Rosa Araujo 2, 6th floor, Lisbon 2.

Qatar

Ambassador: c/o Canadian Embassy, PO Box 25281 Safat, Kuwait City, Kuwait.

Romania

Ambassador: PO Box 2966, Post Office No. 22, Bucharest.

Rwanda

Ambassador: c/o Canadian Embassy, PO Box 8341, Kinshasa, Republic of Zaire.

St. Vincent

High Commissioner: c/o Canadian High Commission, PO Box 404, Bridgetown, Barbados.

San Marino

Consul: c/o Canadian Embassy, Via GB de Rossi 27, 00161 Rome, Italy.

Sao Tomé and Príncipe

Ambassador: c/o Canadian Embassy, PO Box 572, Yaoundé, Cameroon.

Saudi Arabia

Ambassador: PO Box 5050, Jeddah.

Senegal

Ambassador: PO Box 3373, Dakar.

Seychelles

High Commissioner: c/o Canadian High Commission, PO Box 1022, Dar-es-Salaam, United Republic of Tanzania.

Sierra Leone

High Commissioner: c/o Canadian High Commission, PO Box 851, Lagos, Nigeria.

Singapore

High Commissioner: PO Box 845, Singapore 1.

Solomon Islands

High Commissioner: c/o Canadian High Commission, Commonwealth Ave., Canberra, ACT, 2600, Australia.

Somalia

Ambassador: c/o Canadian Embassy, PO Box 5050, Jeddah, Saudi Arabia.

South Africa, Republic of

Ambassador: PO Box 26006, Arcadia, Pretoria 0007.

Spain

Ambassador: Apartado 587, Madrid.

Sri Lanka

High Commissioner: PO Box 1006, Colombo.

Sudan

Ambassador: c/o Canadian Embassy, Kasr el Doubara Post Office, Cairo, Arab Republic of Egypt.

Suriname, Republic of

Ambassador: c/o Canadian High Commission, PO Box 660, Georgetown, Guyana.

Swaziland

High Commissioner: c/o Canadian Embassy, PO Box 26006, Arcadia, Pretoria 0007, South Africa.

Sweden

Ambassador: PO Box 16129, S-10323 Stockholm 16.

Switzerland

Ambassador: PO Box 3000, Berne 6.

Syrian Arab Republic

Ambassador: c/o Canadian Embassy, CP 2300, Beirut, Lebanon.

Tanzania, United Republic of

High Commissioner: PO Box 1022, Dar-es-Salaam.

Thailand

Ambassador: PO Box 2090, Bangkok.

Togo

Ambassador: c/o Canadian High Commission, PO Box 1639, Accra, Ghana.

Tonga

High Commissioner: c/o Canadian High Commission, PO Box 12-049, Wellington North, New Zealand.

Trinidad and Tobago

High Commissioner: PO Box 1246, Port of Spain.

Tunisia

Ambassador: CP 31, Belvédère, Tunis.

Turkey

Ambassador: Nenehatun Caddesi No. 75, Gaziosmanpasa, Ankara.

Uganda

High Commissioner: c/o Canadian High Commission, PO Box 30481, Nairobi, Kenya.

Union of Soviet Socialist Republics

Ambassador: 23 Starokonyushenny Pereulok,
Moscow.

United Arab Emirates

Ambassador: c/o Canadian Embassy, PO Box
25281 Safat, Kuwait City, Kuwait.

United Nations

Ambassador and Permanent Representative: The
Permanent Mission of Canada to the United
Nations, 866 United Nations Plaza, Suite 250,
New York, NY, 10017.

Ambassador and Permanent Representative:
Permanent Mission of Canada to the Office of
the United Nations at Geneva, and to the
Conference of the Committee on
Disarmament, 10A, avenue de Budé, 1202
Geneva.

Ambassador and Permanent Representative:
Permanent Mission of Canada to the
Secretariat of the General Agreement on
Tariffs and Trade, 10A, avenue de Budé, 1202
Geneva.

Note: The Permanent Mission in Geneva is
accredited to the United Nations Specialized
Agencies having their headquarters in Geneva:
International Labour Organization (ILO);
International Telecommunications Union
(ITU); World Health Organization (WHO);
World Meteorological Organization (WMO);
World Intellectual Property Organization
(WIPO).

Permanent Representative: Permanent Mission of
Canada to the United Nations Environment
Program, Comcraft House, Hailé Sélassie
Avenue, PO Box 30481, Nairobi.

Ambassador and Permanent Delegate: Permanent
Delegation of Canada to the United Nations
Educational, Scientific and Cultural
Organization, 1, rue Miollis, Paris XV^e, CP
3.07, Paris VII^e.

Permanent Representative: Permanent Mission of
Canada to the Food and Agriculture
Organization, Via GB de Rossi 27, 00161
Rome.

Permanent Representative: Permanent Mission of
Canada to the United Nations Industrial
Development Organization, Luegerring 10, A-
1010 Vienna.

Permanent Representative: Permanent Mission of
Canada to the International Atomic Energy
Agency, Luegerring 10, A-1010 Vienna.

Note: Canada is also a member of the following UN
Specialized Agencies to which there are no
accredited permanent representatives:
Universal Postal Union (UPU), Berne; Inter-
governmental Maritime Consultative
Organization (IMCO), London; International
Bank for Reconstruction and Development
(IBRD), Washington; International Finance
Corporation (IFC), Washington; International
Development Agency (IDA), Washington;
International Monetary Fund (IMF),
Washington.

United States of America

Ambassador: 1746 Massachusetts Ave. NW,
Washington, DC, 20036.

Upper Volta

Ambassador: c/o Canadian Embassy, 01 PO Box
4104, Abidjan 01, Ivory Coast.

Uruguay

Ambassador: c/o Canadian Embassy, Casilla de
Correo 1598, Buenos Aires, Argentina.

Venezuela

Ambassador: Apartado del Este No. 62302,
Caracas.

Vietnam, Socialist Republic of

Ambassador: c/o Canadian Embassy, PO Box
2090, Bangkok, Thailand.

West Indies Associated States and Montserrat

Commissioner: c/o Canadian High Commission,
PO Box 404, Bridgetown, Barbados.

Western Samoa

High Commissioner: c/o Canadian High
Commission, PO Box 12-049, Wellington
North, New Zealand.

Yemen Arab Republic

Ambassador: c/o Canadian Embassy, PO Box
5050, Jeddah, Saudi Arabia.

Yemen, People's Democratic Republic of

Ambassador: c/o Canadian Embassy, PO Box
5050, Jeddah, Saudi Arabia.

Yugoslavia

Ambassador: Proleterskih Brigada 69, 11000
Belgrade.

Zaire, Republic of

Ambassador: PO Box 8341, Kinshasa.

Zambia

High Commissioner: PO Box 1313, Lusaka.

Representatives of foreign countries in Canada

Afghanistan

Ambassador: 2341 Wyoming Ave. NW,
Washington, DC, 20008, USA.

Algeria

Ambassador: 435 Daly Ave., Ottawa, K1N 6H3.

Argentina

Ambassador: 130 Slater St., 6th floor, Ottawa,
K1P 5H6.

Australia

High Commissioner: 130 Slater St., 13th floor,
Ottawa, K1P 5H6.

Austria

Ambassador: 445 Wilbrod St., Ottawa, K1N 6M7.

Bahamas

High Commissioner: c/o Embassy of the Bahamas,
600 New Hampshire Ave. NW, Suite 865,
Washington, DC, 20037, USA.

Bangladesh

High Commissioner: 85 Range Rd., Suite 402,
Ottawa, K1N 8J6.

Barbados

High Commissioner: 151 Slater St., Suite 700,
Ottawa, K1P 5H3.

Belgium

Ambassador: 85 Range Rd., Suites 601-604,
Ottawa, K1N 8J6.

Benin, People's Republic of

Ambassador: 58 Glebe Ave., Ottawa, K1S 2C3.

Bolivia

Ambassador: 85 Range Rd., Suite 405, Ottawa,
K1N 8J6.

Botswana

High Commissioner: c/o Embassy of the Republic
of Botswana, Van Ness Centre, 4301
Connecticut Ave. NW, Suite 404,
Washington, DC, 20008, USA.

Brazil

Ambassador: 255 Albert St., Suite 900, Ottawa,
K1P 6A9.

Britain

High Commissioner: 80 Elgin St., Ottawa,
K1P 5K7.

Bulgaria

Ambassador: 325 Stewart St., Ottawa,
K1N 6K5.

Burma

Ambassador: 2300 S St. NW, Washington, DC,
20008, USA.

Burundi

Ambassador: 2717 Connecticut Ave. NW,
Washington, DC, 20008, USA.

Cameroon

Ambassador: 170 Clemow Ave., Ottawa,
K1S 2B4.

Central African Empire

Ambassador: 381 Wilbrod Ave., Ottawa,
K1N 6M6.

Chad

Ambassador: 2600 Virginia Ave., Suite 410,
Washington, DC, 20037, USA.

Chile

Ambassador: 56 Sparks St., Suite 801, Ottawa,
K1P 5A9.

China, People's Republic of

Ambassador: 411-415 St. Andrew St., Ottawa,
K1N 5H3.

Colombia

Ambassador: 151 Sparks St., Suite 406, Ottawa,
K1P 5E3.

Congo, People's Republic of the

Ambassador: c/o Permanent Mission of the Congo
to the United Nations, 14 E 65th St., New
York, NY, 10021, USA.

Costa Rica

Ambassador: 2112 S St. NW, Washington, DC,
20008, USA.

Cuba

Ambassador: 388 Main St., Ottawa, K1S 1E3.

Cyprus

High Commissioner: c/o Embassy of Cyprus, 2211
R St. NW, Washington, DC, 20008, USA.

Czechoslovakia

Ambassador: 171 Clemow Ave., Ottawa,
K1S 2B3.

Denmark

Ambassador: 85 Range Rd., Suite 702, Ottawa,
K1N 8J6.

Ecuador

Ambassador: 320 Queen St., Place de Ville, Tower
A, Suite 2226, Ottawa, K1R 5A3.

Egypt, Arab Republic of

Ambassador: 454 Laurier Ave. E, Ottawa,
K1N 6R3.

El Salvador

Ambassador: The Driveway Place, 350 Driveway,
Suite 101, Ottawa, K1S 3N1.

Fiji

High Commissioner: c/o Fiji Mission to the United
Nations, 1 United Nations Plaza, 26th floor,
New York, NY, 10017, USA.

Finland

Ambassador: 222 Somerset St. W, Suite 401,
Ottawa, K2P 2G3.

France

Ambassador: 42 Sussex Dr., Ottawa,
K1M 2C9.

Gabon

Ambassador: 4 Range Rd., Ottawa, K1N 8J5.

Germany, Democratic Republic of

Ambassador: 1717 Massachusetts Ave. NW,
Washington, DC, 20036, USA.

Germany, Federal Republic of

Ambassador: 1 Waverley St., Ottawa, K2P 0T8.

Ghana

High Commissioner: 85 Range Rd., Suite 810,
Ottawa, K1N 8J6.

Greece

Ambassador: 76-80 MacLaren St., Ottawa,
K1M 0G3.

Grenada

High Commissioner: 350 Queen Elizabeth
Driveway, Suite 308, Ottawa, K1S 3N1.

Guatemala

Ambassador: The Driveway Place, 350 Driveway,
Suite 105, Ottawa, K1S 3N1.

Guinea

Ambassador: The Permanent Mission of Guinea to
the United Nations, 820 Second Ave., 16th
floor, New York, NY, 10017, USA.

Guyana

High Commissioner: Burnside Bldg., 151 Slater St., Suite 309, Ottawa, K1P 5H3.

Haiti

Ambassador: 150 Driveway, Suite 111, Ottawa, K2P 1C7.

Holy See

Pro-Nuncio: Apostolic Nunciature, 724 Manor Ave., Rockcliffe Park, K1M 0E3.

Honduras

Ambassador: 350 Sparks St., Suite 403, Ottawa, K1R 7S8.

Hungary

Ambassador: 7 Delaware Ave., Ottawa, K2P 0Z2.

Iceland

Ambassador: c/o Embassy of Iceland, 2022 Connecticut Ave. NW, Washington, DC, 20008, USA.

India

High Commissioner: 200 MacLaren St., Ottawa, K2P 0L6.

Indonesia

Ambassador: 255 Albert St., Suite 1010, Kent Square Building "C", Ottawa, K1P 6A9.

Iran

Ambassador: 85 Range Rd., Suites 307-308, Ottawa, K1N 8J6.

Iraq

Ambassador: 377 Stewart St., Ottawa, K1N 6K9.

Ireland

Ambassador: 170 Metcalfe St., Ottawa, K2P 1P3.

Israel

Ambassador: 410 Laurier Ave. W, Suite 601, Ottawa, K1R 5C4.

Italy

Ambassador: 170 Laurier Ave. W, Ottawa, K1P 5V5.

Ivory Coast

Ambassador: 9 Marlborough Ave., Ottawa, K1N 8E6.

Jamaica

High Commissioner: 85 Range Rd., Suites 201-204, Ottawa, K1N 8J6.

Japan

Ambassador: 255 Sussex Drive, Ottawa, K1N 9E6.

Jordan

Ambassador: 100 Bronson Ave., Suite 701, Ottawa, K1R 6G8.

Kenya

High Commissioner: 141 Laurier Ave. W, Gillin Bldg., Ottawa, K1P 5J3.

Korea

Ambassador: 151 Slater St., Suite 608, Ottawa, K1P 5H3.

Kuwait

Ambassador: c/o Embassy of Kuwait, 2940 Tilden St. NW, Washington, DC, 20008, USA.

Laos

Ambassador: c/o Embassy of People's Democratic Republic of Laos, 2222 S St. NW, Washington, DC, 20008, USA.

Lebanon

Ambassador: 640 Lyon St., Ottawa, K1S 3Z5.

Lesotho

High Commissioner: 350 Sparks St., Suite 503, Ottawa, K1R 5A1.

Liberia

Ambassador: c/o Embassy of Liberia, 5201-16th St. NW, Washington, DC, 20011, USA.

Libyan Arab Republic

Ambassador: c/o Permanent Mission of the Libyan Arab Republic to the United Nations, 866 United Nations Plaza, New York, NY, 10017, USA.

Luxembourg

Ambassador: c/o Embassy of Luxembourg, 2200 Massachusetts Ave. NW, Washington, DC, 20008, USA.

Madagascar, Democratic Republic of

Ambassador: c/o Permanent Mission of the Malagasy Republic to the United Nations, 801 Second Ave., Suite 404, New York, NY, 10017, USA.

Malawi

High Commissioner: 112 Kent St., Suite 905, Tower B, Place de Ville, Ottawa, K1P 5P2.

Malaysia

High Commissioner: 60 Boteler St., Ottawa, K1N 8Y7.

Mali

Ambassador: 50 Goulburn Ave., Ottawa, K1N 8C8.

Malta

High Commissioner: c/o Embassy of Malta, rue Jules Lejaune, 44-1060 Brussels, Belgium.

Mauritania

Ambassador: c/o Permanent Mission of the Islamic Republic of Mauritania to the United Nations, 600 Third Ave., 37th floor, New York, NY, 10016, USA.

Mauritius

High Commissioner: c/o Embassy of Mauritius, Van Ness Centre, 4301 Connecticut Ave. NW, Suite 134, Washington, DC, 20008, USA.

Mexico

Ambassador: 130 Albert St., Suite 206, Ottawa, K1P 5G4.

Mongolia

Ambassador: The Permanent Mission of the Mongolian Republic to the United Nations, 6 E 77th St., New York, NY, 10021, USA.

Morocco

Ambassador: 38 Range Rd., Ottawa, K1N 8J4.

Nepal

Ambassador: c/o Embassy of Nepal, 2131 Leroy Place NW, Washington, DC, 20008, USA.

Netherlands

Ambassador: 275 Slater St., Ottawa, K1P 5H9.

New Zealand

High Commissioner: Metropolitan House, Suite 801, 99 Bank St., Ottawa, K1P 6G3.

Nicaragua

Ambassador: c/o Embassy of Nicaragua, 1627 New Hampshire Ave. NW, Washington, DC, 20009, USA.

Niger

Ambassador: 38 Blackburn Ave., Ottawa, K1N 8A2.

Nigeria

High Commissioner: 295 Metcalfe St., Ottawa, K2P 1R9.

Norway

Ambassador: 140 Wellington St., Suite 700, Victoria Bldg., Ottawa, K1P 5A2.

Oman

Ambassador: c/o Embassy of Oman, 2342 Massachusetts Ave. NW, Washington, DC, 20008, USA.

Pakistan

Ambassador: 170 Metcalfe St., Ottawa, K2P 1P3.

Panama

Ambassador: c/o Embassy of Panama, 2862 McGill Terrace NW, Washington, DC, 20008, USA.

Papua New Guinea

High Commissioner: c/o Permanent Mission of Papua New Guinea to the United Nations, 801 Second Ave., New York, NY, 10017, USA.

Paraguay

Ambassador: c/o Permanent Mission of Paraguay to the OAS, 2400 Massachusetts Ave. NW, Washington, DC, 20008, USA.

Peru

Ambassador: 539 Island Park Dr., Ottawa, K1Y 0B6.

Philippines

Ambassador: 130 Albert St., Suite 607, Ottawa, K1P 5G4.

Poland

Ambassador: 443 Daly Ave., Ottawa, K1N 6H3.

Portugal

Ambassador: 645 Island Park Dr., Ottawa, K1Y 0C2.

Qatar

Ambassador: c/o Permanent Mission of Qatar to the United Nations, 747 Third Ave., 22nd floor, New York, NY, 10017, USA.

Romania

Ambassador: 655 Rideau St., Ottawa, K1N 6A3.

Rwanda

Ambassador: 130 Albert St., Suite 1203, Ottawa, K1P 5G4.

Saudi Arabia

Ambassador: 99 Bank St., Suite 901, Ottawa, K1P 6B9.

Senegal

Ambassador: 57 Marlborough Ave., Ottawa, K1N 8E8.

Sierra Leone

High Commissioner: 1701-19th St. NW, Washington, DC, 20009, USA.

Singapore

High Commissioner: c/o Permanent Mission of Singapore to the United Nations, 1 United Nations Plaza, 26th floor, New York, NY, 10017, USA.

Somalia

Ambassador: 112 Kent St., Suite 918, Tower B, Place de Ville, Ottawa, K1P 5P2.

South Africa

Ambassador: 15 Sussex Dr., Ottawa, K1M 1M8.

Spain

Ambassador: 350 Sparks St., Suite 802, Ottawa, K1R 5A1.

Sri Lanka

High Commissioner: 85 Range Rd., Suites 102-104, Ottawa, K1N 8J6.

Sudan

Ambassador: 85 Range Rd., Suite 1010, Ottawa, K1N 8J6.

Suriname

Ambassador: c/o Embassy of the Republic of Suriname, 2600 Virginia Ave. NW, Washington, DC, 20037, USA.

Swaziland

High Commissioner: c/o Embassy of the Kingdom of Swaziland, Van Ness Centre, 4301 Connecticut Ave. NW, Suite 441, Washington, DC, 20008, USA.

Sweden

Ambassador: 441 MacLaren St., 4th floor, Ottawa, K2P 2H3.

Switzerland

Ambassador: 5 Marlborough Ave., Ottawa, K1N 8E6.

Syria

Ambassador: c/o Permanent Mission of the Syrian Arab Republic to the United Nations, 150 E 58th St., Suite 1500, New York, NY, 10022, USA.

Tanzania, United Republic of

High Commissioner: 50 Range Rd., Ottawa, K1N 8J4.

Thailand

Ambassador: 85 Range Rd., Suite 704, Ottawa,
K1N 8J6.

Togo

Ambassador: 220 Laurier Ave. W, Ottawa,
K1N 6P2.

Trinidad and Tobago

High Commissioner: 75 Albert St., Suite 508,
Ottawa, K1P 5R5.

Tunisia

Ambassador: 515 O'Connor St., Ottawa, K1S 3P8.

Turkey

Ambassador: 197 Wurtemberg St., Ottawa,
K1N 8L9.

Uganda

High Commissioner: 170 Laurier Ave. W,
Suite 601, Ottawa, K1P 5V5.

Union of Soviet Socialist Republics

Ambassador: 285 Charlotte St., Ottawa, K1N 8L5.

United Arab Emirates

Ambassador: 747 Third Ave., New York, NY,
10017, USA.

United States of America

Ambassador: 100 Wellington St., Ottawa, K1P 5T1.

Upper Volta

Ambassador: 48 Range Rd., Ottawa, K1N 8J4.

Uruguay

Ambassador: c/o Embassy of Uruguay, 1918 F St.
NW, Washington, DC, 20006, USA.

Venezuela

Ambassador: 320 Queen St., Suite 2000, Place de
Ville, Tower A, Ottawa, K1R 5A3.

Vietnam, Socialist Republic of

Ambassador: 290 Clemow Ave., Ottawa, K1S 2B8.

Western Samoa

High Commissioner: 300 E 44th St. and Second
Ave., 3rd floor, New York, NY, 10017, USA.

Yemen Arab Republic

Ambassador: Watergate Six Hundred, 600 New
Hampshire Ave. NW, Suite 860, Washington,
DC, 20037, USA.

Yemen, People's Democratic Republic of

Ambassador: c/o Permanent Mission of the
People's Democratic Republic of Yemen, 413
E 51st St., New York, NY, 10022, USA.

Yugoslavia

Ambassador: 17 Blackburn Ave., Ottawa,
K1N 8A2.

Zaire, Republic of

Ambassador: 18 Range Rd., Ottawa, K1N 8J3.

Zambia

High Commissioner: 130 Albert St., Suite 1610,
Ottawa, K1P 5G4.

*Delegation of the Commission of the European
Communities*

Head of Delegation: 350 Sparks St., Suite 1110,
Ottawa, K1R 7S8.

This list of books about Canada, compiled by the National Library of Canada, is a selective bibliography of works published during 1976, 1977 and 1978 (except for two works published in 1975) in the social sciences and humanities. It is intended to assist all readers interested in Canadian materials. The publications are arranged alphabetically by author or title under the following subject headings: general reference works; biography; fine arts and performing arts; linguistics and literature; country and people; sports; general history; regional history; economics; government and politics, law; sociology; education; religion; environment; science and technology. Titles are listed in the language in which they are published. This listing does not replace the national bibliography. For additional works, the reader may consult the monthly and annual compilations of *Canadiana*.

General reference works

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The blue book of Canadian business. v.-. Edited by J.E. Margetts and S.J. Meiklejohn. Toronto: Canadian Newspaper Services International, 1976-.

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Biography

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- Beasley, David R. *The Canadian Don Quixote: the life and works of Major John Richardson, Canada's first novelist*. Erin, Ont.: Porcupine's Quill, 1977. 219 p.
- Berton, Pierre. *The Dionne years: a thirties melodrama*. Toronto: McClelland and Stewart, 1977. 232 p.
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- Broadfoot, Barry. *The pioneer years, 1895-1914: memories of settlers who opened the West*. Toronto: Doubleday Canada, 1976. 406 p.
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- Granatstein, J.L. *Mackenzie King: his life and world*. Toronto: McGraw-Hill Ryerson, 1977. 202 p. (Prime Ministers of Canada series)
- Hamel, Réginald. *Gaétane de Montreuil: journaliste québécoise, 1867-1951*. Montréal: L'Aurore, 1976. 205 p. (Collection Connaissance des pays québécois)
- Hubbard, R.H. *Rideau Hall: an illustrated history of Government House, Ottawa, from Victorian times to the present day*. Montreal: McGill-Queen's University Press; Ottawa: Government House: Publishing Centre, Supply and Services Canada, 1977. xii, 281 p.
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- Lonn, George. *Faces of Canada*. Toronto: Pitt Pub., 1976. 383 p.
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- Oliver, Peter. *G. Howard Ferguson: Ontario Tory*. Toronto: University of Toronto Press, 1977. xv, 501 p. (Ontario historical studies series)
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- Saint-Pierre, Raymond. *Les années Bourassa: l'intégrale des entretiens Bourassa/Saint-Pierre*. Montréal: Éditions Héritage, 1977. 295 p.
- Savoie, Alexandre-J. *Un demi-siècle d'histoire acadienne*. s.l.: A. Savoie, 1976. 237 p.
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- Wilbur, J.R.H. *H.H. Stevens, 1878-1973*. Toronto: University of Toronto Press, 1977. xi, 244 p. (Canadian biographical studies; 6)
- William Aberhart and Social Credit in Alberta*. Edited by Lewis H. Thomas. Toronto: Copp Clark Pub., 1977. 175 p. (Issues in Canadian history)

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- Duval, Paul. *Ken Danby*. Toronto: Clarke, Irwin, 1976. 192 p.

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- Iacurto, Francesco. *Iacurto: souvenirs*. Récit recueilli par Maurice Lebel. Montréal: Stanké, 1976. 256 p.
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Canada Year Book

special articles

Appendix 7

Background articles on many subjects, published in previous editions of the Canada Year Book, are of continuing interest for reference. The following index lists articles by subject, title, author, year of edition and page numbers.

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- The major soil zones and regions of Canada, P.C. Stobbe. 1951. pp 352-6.
- The Board of Grain Commissioners, W.J. MacLeod. 1960. pp 957-8.
- The Canadian Wheat Board and its role in grain marketing, C.B. Davidson. 1960. pp 958-60.
- Changes in Canadian agriculture as reflected by the census of 1961. 1963-64. pp 409-15.
- Contribution of the Canada Department of Agriculture to modern agricultural science. 1966. pp 457-61.
- Federal assistance in livestock improvement. 1967. pp 453-7.
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- Historical sketch of currency and banking. 1938. pp 900-6.
- Wartime control under the Foreign Exchange Control Board, R.H. Tarr. 1941. pp 833-5; 1942. pp 830-3.
- Commercial banking in Canada, J. Douglas Gibson. 1961. pp 1115-20.

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- Early naturalization procedure and events leading up to the Canadian Citizenship Act. 1951. pp 153-5.

Climate and meteorology

- Factors which control Canadian weather, Sir Frederick Stupart. 1925. pp 36-40.
- Temperature and precipitation of northern Canada, A.J. Connor. 1930. pp 41-56.
- Droughts in western Canada, A.J. Connor. 1933. pp 47-59.
- The climate of Canada, C.C. Boughner and M.K. Thomas. 1959. pp 23-51; 1960. pp 31-77.
- The climate of the Canadian Arctic, H.A. Thompson. 1967. pp 55-74.

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- Structural changes in tertiary education in Canada, Miles Wisenthal and Eve Kassirer. 1972. pp 370-7.
- History and development of the Canadian Broadcasting Corporation, Augustin Frigon. 1947. pp 737-40.
- A history of Canadian journalism, 1752-(circa) 1900, W.H. Kesterton. 1957-58. pp 920-34.
- A history of Canadian journalism (circa) 1900-1958, W.H. Kesterton. 1959. pp 883-902.
- The development of telecommunications in Canada, M.E. Callin. 1967. pp 862-9.

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- The evolution of the constitution of Canada down to Confederation, S.A. Cudmore and E.H. Coleman. 1942. pp 34-40.
- The British North America Act, 1867. 1942. pp 40-59.
- Canada's growth in external status, F.H. Soward. 1945. pp 74-9.
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- Yukon Territory and Northwest Territories (historical and current administration of). 1968. pp 110-6.
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- Changes in Canadian manufacturing production
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- Physical geography of the Canadian eastern Arctic,
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- Mobility of Canada's population, 1956-1961, Y. Kasahara. 1966. pp 179-87.
- Recent trends in urbanization and metropolitan growth, Leroy O. Stone and Frances Aubry. 1969. pp 156-65.
- Trends in population growth in Canada with special reference to the decline in fertility, M.V. George. 1970-71. pp 213-20.

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- The International Geophysical Year, D.C. Rose. 1957-58. pp 35-8.
- The Fisheries Research Board, J.L. Kask. 1959. pp 584-8.
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- The Fisheries Research Board of Canada. 1963-64. pp 612-4.
- Astronomy in Canada, Ian Halliday. 1965. pp 47-55.
- A selection of Canadian achievements in science and technology, 1800-1964, John R. Kohr. 1965. pp 398-401.

Trade

- Canada's participation in the changing pattern of world trade, 1953-66, A.M. Coll. 1967. pp 953-66.
- Canada's international trade after the Kennedy round of trade negotiations, G.A. Richardson. 1968. pp 946-54.
- Canada's trade with the European Economic Community, D. Paul Ojha. 1969. pp 977-85.

- Canada's trade with the Pacific Rim countries, M.P. Mathew. 1970-71. pp 1069-78.
- The Canada-United States automotive products agreement, W.M. MacLeod. 1972. pp 1058-69.

Transportation

- The development of aviation in Canada, J.A. Wilson. 1938. pp 710-2.
- Pre-war civil aviation and the defence program, J.A. Wilson. 1941. pp 608-12.
- International Civil Aviation Organization and Canada's participation therein, C.S. Booth. 1952-53. pp 820-7.
- Canals of the St. Lawrence waterway. 1954. pp 830-3.
- History of the Canadian National Railways. 1955. pp 840-51.
- The St. Lawrence Seaway. 1955. pp 885-8.
- Traffic on the Great Lakes-St. Lawrence Seaway. 1956. pp 821-9.
- The St. Lawrence Seaway in operation, S. Judek. 1960. pp 851-60.
- Revolution in Canadian transportation, A.W. Currie. 1962. pp 753-8.
- An outline of the development of civil air transport in Canada, J.R.K. Main. 1967. pp 838-43.
- The first decade of the Seaway, Pierre Camu. 1969. pp 841-5.

To supplement the information in Chapter 3, Government, the following lists give the names of members of the Privy Council, the Senate and cabinet ministers of Canada and the executive councils of the provinces and territories. Except for the cabinet section, which gives three ministries, the lists have all been updated to May 1980. Data on members of the House of Commons voted into office in federal general elections are given in Tables 3.4 and 3.5 in Chapter 3.

The Queen's Privy Council for Canada

The following, with the dates when they were sworn in, were members of the Queen's Privy Council for Canada in May 1980:

- The Hon. William Earl Rowe, August 30, 1935
- The Hon. Lionel Chevrier, April 18, 1945
- The Hon. Paul Joseph James Martin, April 18, 1945
- The Hon. Douglas Charles Abbott, April 18, 1945
- The Hon. Hugues Lapointe, August 25, 1949
- The Hon. Gabriel-Edouard Rinfret, August 25, 1949
- The Hon. Walter Edward Harris, January 18, 1950
- The Hon. James Sinclair, October 15, 1952
- The Hon. John Whitney Pickersgill, June 12, 1953
- The Hon. Jean Lesage, September 17, 1953
- The Hon. George Carlyle Marler, July 1, 1954
- The Hon. Paul Theodore Hellyer, April 26, 1957
- The Hon. Howard Charles Green, June 21, 1957
- The Hon. Donald Methuen Fleming, June 21, 1957
- The Hon. George Hees, June 21, 1957
- The Hon. Léon Balcer, June 21, 1957
- The Hon. George Randolph Pearkes, June 21, 1957
- The Hon. Gordon Churchill, June 21, 1957
- The Hon. Edmund Davie Fulton, June 21, 1957
- The Hon. Douglas Scott Harkness, June 21, 1957
- The Hon. Ellen Louks Fairclough, June 21, 1957
- The Hon. John Angus MacLean, June 21, 1957
- The Hon. Michael Starr, June 21, 1957
- The Hon. William McLean Hamilton, June 21, 1957
- The Hon. William Joseph Browne, June 21, 1957
- The Hon. Jay Waldo Monteith, August 22, 1957
- The Hon. Francis Alvin George Hamilton, August 22, 1957
- HRH The Prince Philip, Duke of Edinburgh, October 14, 1957
- The Hon. Henri Courtemanche, May 12, 1958
- The Hon. David James Walker, August 20, 1959
- The Hon. Joseph-Pierre-Albert Sévigny, August 20, 1959
- The Hon. Hugh John Flemming, October 11, 1960
- The Hon. Noël Dorion, October 11, 1960
- The Hon. Walter Dinsdale, October 11, 1960
- The Hon. Jacques Flynn, December 28, 1961
- The Hon. Paul Martineau, August 9, 1962
- The Hon. Richard Albert Bell, August 9, 1962
- The Rt. Hon. Roland Michener, October 15, 1962
- The Hon. Marcel-Joseph-Aimé Lambert, February 12, 1963
- The Hon. Théogène Ricard, March 18, 1963
- The Hon. Frank Charles McGee, March 18, 1963
- The Hon. Martial Asselin, March 18, 1963
- The Hon. Walter Lockhart Gordon, April 22, 1963
- The Hon. Mitchell William Sharp, April 22, 1963
- The Hon. Azellus Denis, April 22, 1963
- The Hon. George James McIlraith, April 22, 1963
- The Hon. William Moore Benidickson, April 22, 1963
- The Hon. Maurice Lamontagne, April 22, 1963
- The Hon. Lucien Cardin, April 22, 1963
- The Hon. Allan Joseph MacEachen, April 22, 1963
- The Hon. Jean-Paul Deschatelets, April 22, 1963
- The Hon. Hédard Robichaud, April 22, 1963
- The Hon. John Watson MacNaught, April 22, 1963
- The Hon. Roger Teillet, April 22, 1963
- The Hon. Judy V. LaMarsh, April 22, 1963
- The Hon. Charles Mills Drury, April 22, 1963
- The Hon. John Robert Nicholson, April 22, 1963
- The Hon. Harry William Hays, April 22, 1963
- The Hon. John Joseph Connolly, February 3, 1964
- The Hon. Maurice Sauvé, February 3, 1964
- The Hon. Yvon Dupuis, February 3, 1964
- The Hon. George Stanley White, June 25, 1964
- The Hon. Edgar John Benson, June 29, 1964
- The Hon. Léo Alphonse Joseph Cadieux, February 15, 1965
- The Hon. Lawrence T. Pennell, July 7, 1965
- The Hon. Jean-Luc Pepin, July 7, 1965
- The Hon. Alan Aylesworth Macnaughton, October 25, 1965
- The Hon. Jean Marchand, December 18, 1965
- The Hon. Joseph Julien Jean-Pierre Côté, December 18, 1965
- The Hon. John Napier Turner, December 18, 1965
- The Hon. Maurice Bourget, February 22, 1966
- The Rt. Hon. Pierre Elliott Trudeau, April 4, 1967
- The Hon. Jean Chrétien, April 4, 1967
- The Hon. Pauline Vanier, April 11, 1967
- The Hon. John Parmenter Robarts, July 5, 1967
- The Hon. Louis-J. Robichaud, July 5, 1967
- The Hon. Dufferin Roblin, July 5, 1967
- The Hon. Alexander B. Campbell, July 5, 1967
- The Hon. Ernest Charles Manning, July 5, 1967
- The Hon. Joseph Robert Smallwood, July 5, 1967
- The Hon. Robert L. Stanfield, July 7, 1967
- The Rt. Hon. John Robert Cartwright, September 4, 1967

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The Hon. Charles Ronald McKay Granger,
September 25, 1967
The Hon. Bryce Stuart Mackasey, February 9, 1968
The Hon. Donald Stovel Macdonald, April 20,
1968
The Hon. John Carr Munro, April 20, 1968
The Hon. Gérard Pelletier, April 20, 1968
The Hon. Jack Davis, April 26, 1968
The Hon. Horace Andrew (Bud) Olson, July 6,
1968
The Hon. Jean-Eudes Dubé, July 6, 1968
The Hon. Stanley Ronald Basford, July 6, 1968
The Hon. Donald Campbell Jamieson, July 6, 1968
The Hon. Eric William Kierans, July 6, 1968
The Hon. Robert Knight Andras, July 6, 1968
The Hon. James Armstrong Richardson, July 6,
1968
The Hon. Otto Emil Lang, July 6, 1968
The Hon. Herbert Eser Gray, October 20, 1969
The Hon. Robert Douglas George Stanbury,
October 20, 1969
The Rt. Hon. Joseph Honoré G  rald Fauteux,
March 23, 1970
The Hon. Jean-Pierre Goyer, December 22, 1970
The Hon. Alastair William Gillespie, August 12,
1971
The Hon. Martin Patrick O'Connell, August 12,
1971
The Hon. Patrick Morgan Mahoney, January 28,
1972
The Hon. Stanley Haidasz, November 27, 1972
The Hon. Eugene Francis Whelan, November 27,
1972
The Hon. W. Warren Allmand, November 27,
1972
The Hon. James Hugh Faulkner, November 27,
1972
The Hon. Andr   Ouellet, November 27, 1972
The Hon. Daniel Joseph MacDonald, November
27, 1972
The Hon. Marc Lalonde, November 27, 1972
The Hon. Jeanne Sauv  , November 27, 1972
The Rt. Hon. Bora Laskin, January 7, 1974
The Hon. Lucien Lamoureux, August 8, 1974
The Hon. Raymond Joseph Perrault, August 8,
1974
The Hon. Barnett Jerome Danson, August 8, 1974
The Hon. J. Judd Buchanan, August 8, 1974
The Hon. Rom  o LeBlanc, August 8, 1974
The Hon. Muriel McQueen Fergusson, November
7, 1974
The Hon. Pierre Juneau, August 29, 1975
The Hon. Marcel Lessard, September 26, 1975
The Hon. Jack Sydney George Cullen, September
26, 1975
The Hon. Leonard Stephen Marchand, September
15, 1976
The Hon. John Roberts, September 15, 1976

The Hon. Monique B  gin, September 15, 1976
The Hon. Jean-Jacques Blais, September 15, 1976
The Hon. Francis Fox, September 15, 1976
The Hon. Anthony Chisholm Abbott, September
15, 1976
The Hon. Iona Campagnolo, September 15, 1976
The Hon. Joseph-Philippe Guay, November 3,
1976
The Hon. John Henry Horner, April 21, 1977
The Hon. Norman A. Cafik, September 16, 1977
The Hon. J. Gilles Lamontagne, January 19, 1978
The Hon. John M. Reid, November 24, 1978
The Hon. Pierre De Ban  , November 24, 1978
The Rt. Hon. Jules L  ger, June 1, 1979
The Rt. Hon. Joe Clark, June 4, 1979
The Hon. Walter David Baker, June 4, 1979
The Hon. Flora MacDonald, June 4, 1979
The Hon. James A. McGrath, June 4, 1979
The Hon. Erik H. Nielsen, June 4, 1979
The Hon. Allan Frederick Lawrence, June 4, 1979
The Hon. John C. Crosbie, June 4, 1979
The Hon. David S.H. MacDonald, June 4, 1979
The Hon. Lincoln Alexander, June 4, 1979
The Hon. Roch LaSalle, June 4, 1979
The Hon. Donald F. Mazankowski, June 4, 1979
The Hon. Elmer M. MacKay, June 4, 1979
The Hon. Arthur Jacob Epp, June 4, 1979
The Hon. John Allen Fraser, June 4, 1979
The Hon. William Jarvis, June 4, 1979
The Hon. Allan McKinnon, June 4, 1979
The Hon. Sinclair McKnight Stevens, June 4, 1979
The Hon. John Wise, June 4, 1979
The Hon. Ronald George Atkey, June 4, 1979
The Hon. Ray John Hnatyshyn, June 4, 1979
The Hon. David Crombie, June 4, 1979
The Hon. Robert Ren   de Cotret, June 4, 1979
The Hon. William Heward Grafftey, June 4, 1979
The Hon. Perrin Beatty, June 4, 1979
The Hon. J. Robert Howie, June 4, 1979
The Hon. Steven Eugene Paproski, June 4, 1979
The Hon. Ronald Huntington, June 4, 1979
The Hon. Michael H. Wilson, June 4, 1979
The Hon. Renaude Lapointe, November 30, 1979
The Hon. Stanley Howard Knowles, November 30,
1979
The Hon. Hazen Robert Argue, March 3, 1980
The Hon. Gerald Regan, March 3, 1980
The Hon. Mark MacGuigan, March 3, 1980
The Hon. Robert Phillip Kaplan, March 3, 1980
The Hon. James Sydney Fleming, March 3, 1980
The Hon. William Rompkey, March 3, 1980
The Hon. Pierre Buss   res, March 3, 1980
The Hon. Charles Lapointe, March 3, 1980
The Hon. Edward Lumley, March 3, 1980
The Hon. Yvon-Pinard, March 3, 1980
The Hon. Donald Johnston, March 3, 1980
The Hon. Lloyd Axworthy, March 3, 1980
The Hon. Paul Cosgrove, March 3, 1980
The Hon. Judy Erola, March 3, 1980.

The Senate

In May 1980 the representation in the Senate was as follows, listed geographically from east to west by province, followed by territories, and in each grouping chronologically by appointment:

Newfoundland

The Hon. Eric Cook
The Hon. William John Petten
The Hon. Frederick William Rowe
The Hon. Philip Derek Lewis
The Hon. Jack Marshall
The Hon. C. William Dooday

Prince Edward Island

The Hon. Florence Elsie Inman
The Hon. Orville Howard Phillips
The Hon. Mark Lorne Bonnell
The Hon. Heath Nelson Macquarrie

Nova Scotia

The Hon. Donald Smith
The Hon. John Michael Macdonald
The Hon. Margaret Norrie
The Hon. Henry D. Hicks
The Hon. Bernard Alasdair Graham
The Hon. Augustus Irvine Barrow
The Hon. Ernest George Cottreau
The Hon. George Isaac Smith
The Hon. Robert Muir
The Hon. Richard Alphonsus Donahoe

New Brunswick

The Hon. Fred A. McGrand
The Hon. Edgar Fournier
The Hon. Charles Robert McElman
The Hon. Michel Fournier
The Hon. Louis-J. Robichaud, PC
The Hon. Daniel Riley
The Hon. Margaret Jean Anderson
The Hon. L. Norbert Thériault
The Hon. Cyril B. Sherwood
1 vacancy

Quebec

The Hon. Sarto Fournier
The Hon. Hartland de Montarville Molson
The Hon. Louis Philippe Beaubien
The Hon. Jacques Flynn, PC (Leader of the Opposition)
The Hon. Azellus Denis, PC
The Hon. Jean-Paul Deschatelets, PC
The Hon. J.G. Léopold Langlois
The Hon. Paul Desruisseaux
The Hon. Maurice Lamontagne, PC
The Hon. Raymond Eudes
The Hon. Louis de Gonzague Giguère
The Hon. Paul C. Lafond
The Hon. H. Carl Goldenberg
The Hon. Renaude Lapointe, PC
The Hon. Martial Asselin, PC
The Hon. Maurice Riel
The Hon. Jean Marchand, PC (Speaker)
The Hon. Pietro Rizzuto
The Hon. Dalia Wood
The Hon. Fernand-E. Leblanc
The Hon. Yvette Boucher Rousseau
The Hon. Guy Charbonneau
The Hon. Arthur Tremblay

Ontario

The Hon. Salter Adrian Hayden
The Hon. Norman McLeod Paterson
The Hon. John Joseph Connolly, PC
The Hon. David A. Croll
The Hon. Joseph A. Sullivan
The Hon. Lionel Choquette
The Hon. Allister Grosart
The Hon. David James Walker, PC
The Hon. Rhéal Bélisle
The Hon. Daniel Aiken Lang
The Hon. William Moore Benidickson, PC
The Hon. Douglas Keith Davey
The Hon. Andrew Ernest Thompson
The Hon. Keith Laird
The Hon. Richard James Stanbury
The Hon. George James McLraith, PC
The Hon. Joan Neiman
The Hon. John Morrow Godfrey
The Hon. Royce Frith
The Hon. Peter Bosa
The Hon. Stanley Haidasz, PC
The Hon. Florence Bayard Bird
The Hon. Lowell Murray
1 vacancy

Manitoba

The Hon. Paul Yuzyk
The Hon. Douglas Donald Everett
The Hon. Gildas L. Molgat
The Hon. Dufferin Roblin, PC
The Hon. Joseph-Philippe Guay, PC
The Hon. Nathan Nurgitz

Saskatchewan

The Hon. Hazen Robert Argue
The Hon. Herbert O. Sparrow
The Hon. Sidney L. Buckwold
The Hon. David Gordon Steuart
The Hon. Reginald James Balfour
1 vacancy

Alberta

The Hon. Donald Cameron
The Hon. Earl Adam Hastings
The Hon. Harry William Hays, PC
The Hon. Ernest Charles Manning, PC
The Hon. Horace Andrew (Bud) Olson, PC
The Hon. Martha P. Bielish

British Columbia

The Hon. Ann Elizabeth Bell
The Hon. Edward M. Lawson
The Hon. George Clifford van Roggen
The Hon. Guy Williams
The Hon. Raymond Joseph Perrault, PC (Leader of the Government)
The Hon. Jack Austin

Yukon

The Hon. Paul Lucier

Northwest Territories

The Hon. Willie Adams.

Cabinet ministers

Members of the 20th ministry. In March 1979 the following were ministers of the federal cabinet, listed according to precedence:

Prime Minister, The Rt. Hon. Pierre Elliott Trudeau
 Deputy Prime Minister and President of the Queen's Privy Council for Canada, The Hon. Allan Joseph MacEachen
 Minister of Finance, The Hon. Jean Chrétien
 Secretary of State for External Affairs, The Hon. Donald Campbell Jamieson
 President of the Board of Economic Development Ministers, The Hon. Robert Knight Andras
 Minister of Transport, The Hon. Otto Emil Lang
 Minister of Energy, Mines and Resources and Minister of State for Science and Technology,
 The Hon. Alastair William Gillespie
 Minister of Labour, The Hon. Martin Patrick O'Connell
 Minister of Agriculture, The Hon. Eugene Francis Whelan
 Minister of Consumer and Corporate Affairs, The Hon. W. Warren Allmand
 Minister of Indian Affairs and Northern Development, The Hon. James Hugh Faulkner
 Minister of Public Works and Minister of State for Urban Affairs, The Hon. André Ouellet
 Minister of Veterans Affairs, The Hon. Daniel Joseph MacDonald
 Minister of Justice and Attorney General of Canada, The Hon. Marc Lalonde
 Minister of Communications, The Hon. Jeanne Sauvé
 Leader of the Government in the Senate, The Hon. Raymond Joseph Perrault
 Minister of National Defence, The Hon. Barnett Jerome Danson
 President of the Treasury Board, The Hon. J. Judd Buchanan
 Minister of Fisheries and the Environment, The Hon. Roméo LeBlanc
 Minister of Regional Economic Expansion, The Hon. Marcel Lessard
 Minister of Employment and Immigration, The Hon. Jack Sydney George Cullen
 Minister of State (Environment), The Hon. Leonard Stephen Marchand
 Secretary of State of Canada, The Hon. John Roberts
 Minister of National Health and Welfare, The Hon. Monique Bégin
 Solicitor General of Canada, The Hon. Jean-Jacques Blais
 Minister of National Revenue and Minister of State (Small Business),
 The Hon. Anthony Chisholm Abbott
 Minister of State (Fitness and Amateur Sport), The Hon. Iona Campagnolo
 Minister of Industry, Trade and Commerce, The Hon. John Henry Horner
 Minister of State (Multiculturalism), The Hon. Norman A. Cafik
 Postmaster General, The Hon. J. Gilles Lamontagne
 Minister of State for Federal-Provincial Relations, The Hon. John M. Reid
 Minister of Supply and Services, The Hon. Pierre De Bané.

Members of the 21st ministry. In June 1979 the following were ministers of the federal cabinet according to precedence:

Prime Minister, The Rt. Hon. Joe Clark
 Leader of the Government in the Senate, Minister of Justice, and Attorney General,
 The Hon. Jacques Flynn
 Minister of State for the Canadian International Development Agency, The Hon. Martial Asselin
 President of the Queen's Privy Council for Canada and Minister of National Revenue,
 The Hon. Walter David Baker
 Secretary of State for External Affairs, The Hon. Flora MacDonald
 Minister of Fisheries and Oceans, The Hon. James A. McGrath
 Minister of Public Works, The Hon. Erik H. Nielsen
 Solicitor General of Canada and Minister of Consumer and Corporate Affairs,
 The Hon. Allan Frederick Lawrence
 Minister of Finance, The Hon. John C. Crosbie
 Secretary of State of Canada and Minister of Communications, The Hon. David S.H. MacDonald
 Minister of Labour, The Hon. Lincoln Alexander
 Minister of Supply and Services, The Hon. Roch LaSalle
 Minister of Transport, The Hon. Donald F. Mazankowski
 Minister of Regional Economic Expansion, The Hon. Elmer M. MacKay
 Minister of Indian Affairs and Northern Development, The Hon. Arthur Jacob Epp
 Postmaster General and Minister of the Environment, The Hon. John Allen Fraser
 Minister of State for Federal-Provincial Relations, The Hon. William Jarvis

Minister of National Defence and Minister of Veterans Affairs, The Hon. Allan McKinnon
 President of the Treasury Board, The Hon. Sinclair McKnight Stevens
 Minister of Agriculture, The Hon. John Wise
 Minister of Employment and Immigration, The Hon. Ronald George Atkey
 Minister of Energy, Mines and Resources and Minister of State for Science and Technology,
 The Hon. Ray John Hnatyshyn
 Minister of National Health and Welfare, The Hon. David Crombie
 Minister of Industry, Trade and Commerce and Minister of State for Economic Development, The Hon.
 Robert René de Cotrêt
 Minister of State for Social Programs, The Hon. William Heward Grafftey
 Minister of State (Treasury Board), The Hon. Perrin Beatty
 Minister of State (Transport), The Hon. J. Robert Howie
 Minister of State for Fitness and Amateur Sport and Multiculturalism, The Hon. Steven Eugene Paproski
 Minister of State for Small Business and Industry, The Hon. Ronald Huntington
 Minister of State for International Trade, The Hon. Michael H. Wilson.

Members of the 22nd ministry. In March 1980 the following were ministers of the federal cabinet according to precedence:

Prime Minister, The Rt. Hon. Pierre Elliott Trudeau
 Deputy Prime Minister and Minister of Finance, The Hon. Allan Joseph MacEachen
 Minister of Transport, The Hon. Jean-Luc Pepin
 Minister of Justice and Attorney General and Minister of State for Social Development,
 The Hon. Jean Chrétien
 Minister of Indian Affairs and Northern Development, The Hon. John Carr Munro
 Minister of State for Economic Development, The Hon. Horace Andrew (Bud) Olson
 Minister of Industry, Trade and Commerce, The Hon. Herbert Eser Gray
 Minister of Agriculture, The Hon. Eugene Francis Whelan
 Minister of Consumer and Corporate Affairs and Postmaster General, The Hon. André Ouellet
 Minister of Veterans Affairs, The Hon. Daniel Joseph MacDonald
 Minister of Energy, Mines and Resources, The Hon. Marc Lalonde
 Leader of the Government in the Senate, The Hon. Raymond Joseph Perrault
 Minister of Fisheries and Oceans, The Hon. Roméo LeBlanc
 Minister of State for Science and Technology and Minister of the Environment, The Hon. John Roberts
 Minister of National Health and Welfare, The Hon. Monique Bégin
 Minister of Supply and Services, The Hon. Jean-Jacques Blais
 Secretary of State and Minister of Communications, The Hon. Francis Fox
 Minister of National Defence, The Hon. J. Gilles Lamontagne
 Minister of Regional Economic Expansion, The Hon. Pierre De Bané
 Minister of State (Canadian Wheat Board), The Hon. Hazen Robert Argue
 Minister of Labour, The Hon. Gerald Regan
 Secretary of State for External Affairs, The Hon. Mark MacGuigan
 Solicitor General, The Hon. Robert Phillip Kaplan
 Minister of State (Multiculturalism), The Hon. James Sydney Fleming
 Minister of National Revenue, The Hon. William Rompkey
 Minister of State (Finance), The Hon. Pierre Bussières
 Minister of State (Small Businesses), The Hon. Charles Lapointe
 Minister of State (Trade), The Hon. Edward Lumley
 President of the Queen's Privy Council for Canada, The Hon. Yvon Pinard
 President of the Treasury Board, The Hon. Donald Johnston
 Minister of Employment and Immigration, The Hon. Lloyd Axworthy
 Minister of Public Works, The Hon. Paul Cosgrove
 Minister of State (Mines), The Hon. Judy Erola.

Provincial governments

The following were the executive councils of the provinces, from east to west across Canada, and the territories in May 1980.

Newfoundland

Premier and Minister responsible for Intergovernmental Affairs, The Hon. A. Brian Peckford
 President of the Council and Government House Leader, The Hon. William Marshall, QC
 Minister of Justice, The Hon. Gerald Ottenheimer

Minister of Finance, The Hon. Dr. John Collins
 Minister of Transportation and Communications, The Hon. R.C. Brett
 Minister of Social Services, The Hon. T.V. Hickey
 Minister of Health, The Hon. Wallace House
 Minister of Industrial Development and Minister of Mines and Energy, The Hon. Leo Barry
 Minister of Municipal Affairs and Housing and President of Treasury Board, The Hon. Neil Windsor
 Minister of Public Works and Services, The Hon. Haig Young
 Minister of Labour and Manpower, The Hon. Jerome Dinn
 Minister of Consumer Affairs and Environment, The Hon. Hazel R. Newhook
 Minister of Fisheries, The Hon. James Morgan
 Minister of Education, The Hon. Lynn Verge
 Minister of Forest Resources and Lands, The Hon. Charles Power
 Minister of Rural Agricultural and Northern Development, The Hon. Joseph Goudie
 Minister of Tourism, Recreation and Culture, The Hon. Ron G. Dawe.

Prince Edward Island

Premier and President of the Executive Council, The Hon. J. Angus MacLean
 Minister of Fisheries and Minister of Labour, The Hon. Leo F. Rossiter
 Minister of Finance, The Hon. Lloyd G. MacPhail
 Minister of Health and Social Services, The Hon. James M. Lee
 Minister of Highways and Public Works, The Hon. George R. McMahon, QC
 Minister of Community Affairs, The Hon. Patrick G. Binns
 Minister of Justice and Attorney General, The Hon. Horace B. Carver, QC
 Minister of Agriculture and Forestry, The Hon. Prowse G. Chappell
 Minister of Education, The Hon. Frederick L. Driscoll
 Minister of Tourism, Industry and Energy, The Hon. Barry R. Clark.

Nova Scotia

Premier, President of the Executive Council and Chairman of the Policy Board, The Hon. John M. Buchanan, QC
 Minister of Development, Minister responsible for Intergovernmental Affairs and Minister in charge of administration of the Research Foundation Corporation Act, The Hon. Roland J. Thornhill
 Minister of Lands and Forests and Minister in charge of administration of the Liquor Control Act, The Hon. George Henley
 Minister of Health, Minister in charge of administration of the Drug Dependency Act and Registrar General, The Hon. Gerald Sheehy, DVM
 Attorney General, Provincial Secretary and Minister in charge of administration of the Regulations Act, The Hon. Henry W. How, QC
 Minister of Mines and Minister in charge of the Nova Scotia Energy Council, The Hon. Ronald Barkhouse
 Minister of Agriculture and Marketing, Minister of the Environment and Minister in charge of administration of the EMO (NS) Act and regulations, The Hon. Roger S. Bacon
 Minister of Fisheries, The Hon. Donald Cameron
 Minister of Tourism and Minister of Culture, Fitness and Recreation, The Hon. Bruce Cochran
 Minister of Municipal Affairs and Minister in charge of administration of the Housing Development Act, The Hon. John MacIsaac
 Minister of Labour and Minister in charge of administration of the Human Rights Act, The Hon. Kenneth Streatch
 Minister of Management Board (Treasury Board and CSC and Minister in charge of administration of the Civil Service Act, The Hon. Ronald Giffin
 Minister of Education and Minister in charge of administration of the Advisory Council on Status of Women Act, The Hon. Terence R.B. Donahoe
 Minister of Transportation and Minister in charge of Office of Communications Policy, The Hon. Thomas J. McInnis
 Minister of Finance, The Hon. Joel Matheson
 Minister of Social Services, Minister of Consumer Affairs and Minister in charge of administration of Residential Tenancies Act, The Hon. Laird Stirling
 Minister of Public Works and Minister in charge of administration of Communications and Information Act, The Hon. Gerald Lawrence.

New Brunswick

Premier, The Hon. Richard Hatfield
 Minister of Justice, The Hon. Rodman E. Logan, QC
 Chairman of the New Brunswick Electric Power Commission, The Hon. G.W.N. Cockburn, QC
 Minister of Finance, The Hon. Fernand Dubé, QC

Chairman of Treasury Board, The Hon. Jean Maurice Simard
 Minister of Fisheries, The Hon. Jean Gauvin
 Minister of Supply and Services, The Hon. Harold Fanjoy
 Minister of Transportation, The Hon. Wilfred Bishop
 Minister of Natural Resources, The Hon. J.W. (Bud) Bird
 Minister of Agriculture and Rural Development, The Hon. Malcolm MacLeod
 Minister of Health, The Hon. Brenda Robertson
 Minister of Social Services, The Hon. Leslie Hull
 Acting Minister of Labour and Manpower, The Hon. Mabel DeWare
 Minister of Education, The Hon. Charles Gallagher
 Minister of Municipal Affairs, The Hon. Horace B. Smith
 Minister of Commerce and Development, The Hon. Gerald S. Merrithew
 Minister of Youth, Recreation and Cultural Resources, The Hon. Jean-Pierre Ouellet
 Minister of Tourism, The Hon. Leland McGaw
 Minister of the Environment, The Hon. Eric Kipping.

Quebec

Prime Minister, The Hon. René Lévesque
 Vice Prime Minister and Minister of Education, The Hon. Jacques-Yvan Morin
 Minister of Finance and President of the Treasury Board, The Hon. Jacques Parizeau
 Minister of Intergovernmental Affairs, The Hon. Claude Morin
 Minister of State for Cultural and Scientific Development, The Hon. Camille Laurin
 Minister of State for Economic Development, The Hon. Bernard Landry
 Minister of State for Social Development, The Hon. Pierre Marois
 Minister of State for Planning and Minister responsible for the OPDQ (Office de planification et de développement du Québec), The Hon. Jacques Léonard
 Minister of Justice and Minister of State for Electoral Reform, The Hon. Marc-André Bédard
 Minister of State for the Status of Women, The Hon. Lise Payette
 Government House Leader and Minister responsible for Parliamentary Affairs, The Hon. Claude Charron
 Minister of Recreation, Fish and Game and Vice President of the Treasury Board,
 The Hon. Lucien Lessard
 Minister responsible for the Environment, The Hon. Marcel Léger
 Minister of Consumer Affairs, Co-operatives and Financial Institutions, The Hon. Guy Joron
 Minister of Energy and Resources, The Hon. Yves Bérubé
 Minister of Agriculture, Fisheries and Food, The Hon. Jean Garon
 Minister of Social Affairs, The Hon. Denis Lazure
 Minister of Municipal Affairs, The Hon. Guy Tardif
 Minister of Immigration, The Hon. Jacques Couture
 Minister of Industry, Commerce and Tourism, The Hon. Yves-L. Duhaime
 Minister of Transport, The Hon. Denis De Belleval
 Minister of Labour and Manpower, The Hon. Pierre-Marc Johnson
 Minister of Public Works and Supply, The Hon. Jocelyne Ouellette
 Minister of Cultural Affairs and Minister of Communications, The Hon. Denis Vaugeois
 Minister of Public Service, The Hon. François Gendron
 Minister of Revenue, The Hon. Michel Clair.

Ontario

Premier and President of the Council, The Hon. William G. Davis, QC
 Minister of Energy and Deputy Premier, The Hon. Robert Welch, QC
 Minister of Natural Resources, The Hon. James A.C. Auld
 Provincial Secretary for Resources Development, The Hon. René Brunelle
 Minister of Intergovernmental Affairs, The Hon. Thomas Wells
 Minister of Northern Affairs, The Hon. Leo Bernier
 Minister of Transportation and Communications, The Hon. James W. Snow
 Provincial Secretary for Social Development, The Hon. Margaret Birch
 Minister of Housing, The Hon. Claude Bennett
 Treasurer of Ontario and Minister of Economics, The Hon. Frank Miller
 Minister of Health, The Hon. Dennis R. Timbrell
 Minister of the Environment, The Hon. Harry Parrott
 Minister of Education and Minister of Colleges and Universities, The Hon. Bette Stephenson
 Attorney General and Solicitor General, The Hon. Roy McMurtry, QC
 Minister of Agriculture and Food, The Hon. Lorne C. Henderson
 Minister of Community and Social Services, The Hon. Keith C. Norton, QC
 Minister of Consumer and Commercial Relations, The Hon. Frank Drea

Minister of Industry and Tourism, The Hon. Larry Grossman, QC
 Chairman of Management Board of Cabinet and Chairman of Cabinet, The Hon. George McCague
 Minister of Revenue, The Hon. Lorne Maack
 Minister of Culture and Recreation, The Hon. Reuben Baetz
 Minister of Government Services, The Hon. Douglas J. Wiseman
 Minister of Labour, The Hon. Robert Elgie
 Provincial Secretary for Justice and Minister of Correctional Services, The Hon. Gordon Walker, QC
 Minister without portfolio, The Hon. Bud Gregory
 Minister without portfolio, The Hon. W. Pope, QC.

Manitoba

Premier, President of the Executive Council and Minister of Dominion-Provincial Relations,
 The Hon. Sterling R. Lyon, QC
 Minister of Finance, Minister of Energy and Mines, Minister responsible for Manitoba Forestry Resources
 Ltd., Minister charged with the administration of the Manitoba Hydro Act, Chairman of the Manitoba
 Energy Council and Chairman of the Cabinet Committee on Economic Development,
 The Hon. Donald W. Craik
 Minister without portfolio, The Hon. Edward R. McGill
 Minister of Consumer and Corporate Affairs and Environment, Minister responsible for the Rent
 Stabilization Board and the Office of the Superintendent of Insurance, The Hon. Warner H. Jorgenson
 Minister of Health and Chairman of the Community Services Committee of Cabinet,
 The Hon. Louis R. Sherman
 Minister of Government Services, Minister responsible for the Manitoba Data Services and Minister
 responsible for the Manitoba Telephone System and Manitoba Public Insurance Corp.,
 The Hon. Harry J. Enns
 Minister of Economic Development and Tourism and Minister responsible for the Manitoba Housing and
 Renewal Corp., The Hon. J. Franklin Johnston
 Minister of Agriculture, The Hon. James E. Downey
 Minister of Education, The Hon. Keith A. Cosens
 Attorney General, Keeper of the Great Seal, Minister of Urban Affairs, Minister responsible for
 administration of the Liquor Control Act and Government House Leader,
 The Hon. Gerald W.J. Mercier, QC
 Minister of Fitness, Recreation and Sport, Minister of Co-operative Development, and Minister
 responsible for the Manitoba Development Corp. and for the administration of the Manitoba Lotteries
 Act, The Hon. Robert D. Banman
 Minister of Labour and Manpower and Minister responsible for the Civil Service Commission,
 The Hon. Ken MacMaster
 Minister of Natural Resources and Chairman of the Treasury Board, The Hon. Brian A. Ransom
 Minister of Community Services and Corrections, The Hon. George C. Minaker
 Minister of Municipal Affairs, Minister of Northern Affairs, and Minister responsible for the Communities
 Economic Development Fund, The Hon. Douglas M. Gourlay
 Minister of Highways and Transportation and Chairman of the Provincial Land Use Committee,
 The Hon. Donald W. Orchard.

Saskatchewan

Premier and President of the Executive Council, The Hon. A.E. Blakeney
 Attorney General and Minister of Intergovernmental Affairs, The Hon. R.J. Romanow
 Minister of Mineral Resources, The Hon. J.R. Messer
 Minister of Urban Affairs, The Hon. W.E. Smishek
 Minister of Labour and Minister of Government Services, The Hon. G.T. Snyder
 Minister of the Environment, The Hon. G.R. Bowerman
 Minister of Agriculture, The Hon. G. MacMurphy
 Minister of Highways and Transportation, The Hon. E. Kramer
 Provincial Secretary, The Hon. E. Cowley
 Minister of Finance, The Hon. E. Tchorzewski
 Minister of Revenue, Supply and Services and Minister of Consumer Affairs, The Hon. W.A. Robbins
 Minister of Rural Affairs, The Hon. E.E. Kaeding
 Minister of Health, The Hon. H.H. Rolfe
 Minister of Culture and Youth, The Hon. E.B. Shillington
 Minister of Industry and Commerce, The Hon. N. Vickar
 Minister of Telephones and Minister of Co-operation and Co-operative Development, The Hon. D. Cody
 Minister of Tourism and Renewable Resources, The Hon. R. Gross
 Minister of Social Services, The Hon. M.J. Koskie
 Minister of Northern Saskatchewan, The Hon. J. Hammersmith
 Minister of Education and Minister of Continuing Education, The Hon. D. McArthur.

Alberta

Premier and President of the Executive Council, The Hon. Peter Lougheed
 Deputy Premier and Minister of Economic Development, The Hon. Hugh Planche
 Provincial Treasurer, The Hon. Louis D. Hyndman
 Minister of Energy and Natural Resources, The Hon. C. Mervin Leitch
 Attorney General and Government House Leader, The Hon. Neil S. Crawford
 Minister of Hospitals and Medical Care, The Hon. David J. Russell
 Minister of Municipal Affairs, The Hon. Marvin E. Moore
 Minister of Agriculture, The Hon. Dallas W. Schmidt
 Minister of Federal and Intergovernmental Affairs, The Hon. Dick Johnston
 Minister of Labour, The Hon. Leslie G. Young
 Minister of Education, The Hon. David King
 Minister of Advanced Education and Manpower and Deputy Government House Leader, The Hon. James D. Horsman
 Minister of Consumer and Corporate Affairs, The Hon. Julian J.G. Koziak
 Minister of Social Services and Community Health, The Hon. Robert J. Bogle
 Solicitor General, The Hon. Graham L. Harle
 Minister of Housing and Public Works, The Hon. Thomas W. Chambers
 Minister of Environment, The Hon. John (Jack) W. Cookson
 Minister of Transportation, The Hon. Henry Kroeger
 Minister of Government Services, The Hon. Stewart A. McCrae
 Minister of Utilities and Telephones, The Hon. Lawrence R. Shaben
 Minister of Tourism and Small Business, The Hon. J. Allen Adair
 Minister of Recreation and Parks, The Hon. Peter Trynchy
 Minister of State for Economic Development — International Trade, The Hon. Horst A. Schmid
 Associate Minister of Public Lands and Wildlife, The Hon. James E. (Bud) Miller
 Associate Minister of Telephones, The Hon. Dr. P. Neil Webber
 Minister responsible for Native Affairs, The Hon. Dr. Donald J. McCrimmon
 Minister responsible for Culture, The Hon. Mary LeMessurier
 Minister responsible for Workers' Health, Safety and Compensation, The Hon. W. Bill Diachuk
 Minister responsible for Personnel Administration, The Hon. Greg Stevens.

British Columbia

Premier, President of the Council, The Hon. William R. Bennett
 Deputy Premier and Minister of Human Resources, The Hon. Grace M. McCarthy
 Provincial Secretary and Minister of Government Services, The Hon. Evan M. Wolfe
 Attorney General, The Hon. L. Allan Williams
 Minister of Finance, The Hon. Hugh Austin Curtis
 Minister of Agriculture, The Hon. James J. Hewitt
 Minister of Education, The Hon. Brian R.D. Smith
 Minister of Labour, The Hon. John H. Heinrich
 Minister of Municipal Affairs, The Hon. William N. Vander Zalm
 Minister of Transportation and Highways, The Hon. Alexander V. Fraser
 Minister of Energy, Mines and Petroleum Resources, The Hon. Robert Howard McClelland
 Minister of Health, The Hon. Kenneth Rafe Mair
 Minister of Industry and Small Business Development, The Hon. Donald McGray Phillips
 Minister of Forests, The Hon. Thomas M. Waterland
 Minister of Environment, The Hon. C. Stephen Rogers
 Minister of Lands, Parks and Housing, The Hon. James R. Chabot
 Minister of Consumer and Corporate Affairs, The Hon. James A. Nielsen
 Minister of Universities, Science and Communications, The Hon. Patrick Lucey McGeer
 Minister of Intergovernmental Relations, The Hon. Garde Basil Gardom
 Minister of Tourism, The Hon. Patricia Jane Jordan.

Yukon

Commissioner (vacant)
 Yukon Administrator, D. Bell
 Clerk of Assembly, P. Michael
 Executive Council: Chris Pearson (government leader), Dan Lang, Meg McCall, Doug Graham, Peter Hanson, members; L.J. Adams, secretary
 Other members of the assembly: Al Falle, Grafton Njootli, Howard Tracey, G. Lattin, D. Taylor (speaker), J. Hibberd, T. Penikett, I. MacKay, A. McGuire, M. Byblow, R. Fleming.

Northwest Territories

Commissioner, J.H. Parker

Deputy Commissioner, R.S. Pilot

Elected executive committee members: George Braden, Tom Butters, Arnold McCallum

Members of the Council: Robert H. MacQuarrie (speaker), Moses Appaqiq, Joe Arlooktoo, James Arreak, George Braden, Tom Butters, Nellie Cournoyea, Tagak Curley, Mark Evaluarjuk, Peter Fraser, Arnold McCallum, Bruce McLaughlin, Richard Nerysoo, William Noah, Dennis Patterson, Ludy Pudluk, Robert Sayine, Nick Sibbeston, Lynda Sorensen, Don Stewart, Kane Tologanak, James Wah-Shee

Clerk, W.H. Remnant

Legal Adviser, Stien Lal.

Federal commissions

Royal commissions under Part I of the *Inquiries Act*, established up to October 3, 1977, are described in previous editions of the *Canada Year Book* beginning with the 1940 edition. The following list presents the federal commissions established between October 1977 and May 1980, and the name of the chief commissioner or chairman.

Special adviser on the Canadian automotive industry, S. Simon Reisman
Changes in prices, profits, compensation and costs (inflation), Hon. Harold A. Renouf
Certain allegations concerning commercial practices of the Canadian Dairy Commission, Hugh F. Gibson
Railway safety as it relates to the handling of dangerous goods (Mississauga derailment), Samuel G.M. Grange.

Provincial and territorial commissions

The following list presents commissions of inquiry and provincial and territorial commissions established between January 1977 and May 1980, the name of the chief commissioner or chairman, and the date each was established:

Newfoundland

Commission of inquiry into cause or causes of recent industrial accidents involving death which occurred within the mines and property of IOCC at Labrador City and to investigate safety in general at the mine, Mr. Justice Vincent McCarthy, March 4, 1977

Commission of inquiry into purchasing procedures of the Department of Public Works and Services, Mr. Justice John W. Mahoney, June 16, 1977

Royal commission into the disposition of the Canada Summer Games facilities, Mr. Justice Jeffrey Steele, December 1, 1977

Commission of inquiry into publication of contents of confidential police reports relating to the investigation by the Department of Justice into the cause and origin and possible responsibility for a fire at Elizabeth Towers Apartments, St. John's on April 26, 1978, Mr. Justice P. Lloyd Soper, February 23, 1979
Royal commission on forest protection and management, Dr. Cyril Poole, May 2, 1980.

Prince Edward Island

Commission of inquiry on shopping centres and retail stores, Francis MacNeill, November 1979.

Nova Scotia

To inquire into and make recommendations to the Governor-in-Council respecting the appropriate form of local government organization for the area of the County of Halifax lying in the vicinity of Sackville, H.M. Nason, September 8, 1977

To inquire into the remuneration of elected officials, W.A. MacKay, December 20, 1977

To inquire into all matters pertaining to the fund administered by the Canada Permanent Trust Co. as agent for the Dominion Coal Workers' Relief Association, J. Russell MacEwan, September 4, 1979.

New Brunswick

Alcoholism and Drug Dependency Commission, Dr. Everett Chalmers, September 6, 1978.

Quebec

To inquire into and advise on the systems of collective bargaining in the public and para-public sectors, Yves Martin, July 1977

To inquire into the cost of the 21st Olympic games and facilities, Albert H. Malouf, July 1977

To inquire into the search during the night of October 6/7, 1972 at 3459 St-Hubert Street in Montreal, Jean Keable, September 1977

Commission of inquiry on the possible creation of an inter-municipal transit corporation for the area situated northeast of Montreal Island, November 1978

Commission of inquiry on vocational and socio-cultural training for adults, Michelle Jean, January 1980.

Ontario

To inquire into the state of freedom of information and individual privacy as it pertains to the government of Ontario, D. Carlton Williams, March 30, 1977

To investigate the safety and reliability of aluminum-wired electrical circuits for residential use, Tuzo Wilson, April 6, 1977

To inquire into the status of pensions in Ontario, Miss Donna J. Haley, QC, April 20, 1977

To inquire into any improper influence being brought to bear on members of the Ontario government or its public service by officials of Waste Management Inc., Mr. Justice Sam Hughes, May 12, 1977

To determine the effects on the environment of major enterprises north of the 50th parallel in Ontario, Mr. Justice Patrick Hartt, July 13, 1977

To inquire into the discounting and allowances in the food industry in Ontario, His Honour Wilfred Leach, August 23, 1977

To inquire into the confidentiality of health records in Ontario, Mr. Justice Horace Kriver, December 21, 1977

To inquire into matters of health and safety arising from use of asbestos in Ontario, Dr. J. Stéphane Dupré, April 29, 1980.

Manitoba

To review and study the organization of the executive government of the province and the various departments thereof, the Crown agencies and the boards and commissions that perform duties and functions under various acts of the legislature to ascertain whether any improvement in the administration of government can be achieved, Hon. Sidney J. Spivak, QC and Conrad S. Riley, November 16, 1977

Manitoba Hydro Inquiry Commission, Hon. G.E. Tritschler, December 28, 1977

Manitoba Lotteries Review Committee, Graeme Thomson Haig, QC, August 8, 1978.

Alberta

To inquire into and report upon the affairs and activities of Royal American Shows Inc., Mr. Justice Herbert Laycraft, April 22, 1977

To review the operation of the Child Welfare Act and the Social Care Facilities Licensing Act, Mr. Justice J.C. Cavanagh, March 16, 1980.

British Columbia

To inquire into the conduct of the public business relating to the proposed development and construction of the Grizzly Valley natural gas pipeline, Mr. Justice Walter Kirke Smith, January 11, 1977

To inquire into all aspects of the management and development of the British Columbia Railway, Mr. Justice Lloyd George McKenzie, February 7, 1977

To inquire into all aspects of the management and operation of programs and facilities related to the disposition and incarceration of female offenders, Hon. Madam Justice Patricia M. Proudfoot, December 5, 1977

To inquire into the need, if any, for amendment of the Constitution Act and the Provincial Elections Act, His Honour Judge Lawrence Smith Eckardt, January 12, 1978

To inquire into the adequacy of existing measures providing protection as the result of uranium mining in British Columbia, Dr. David Bates, Dr. James Murray and Mr. Valter Raudsepp, January 18, 1979.

Yukon

To inquire and report on a matter connected with the conduct of the public business of the territory, J.J. Stratton, QC, December 1, 1977.

Northwest Territories

To examine the electoral districts boundaries commission of the Northwest Territories, Mr. Justice C.F. Tallis.

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